2004.5

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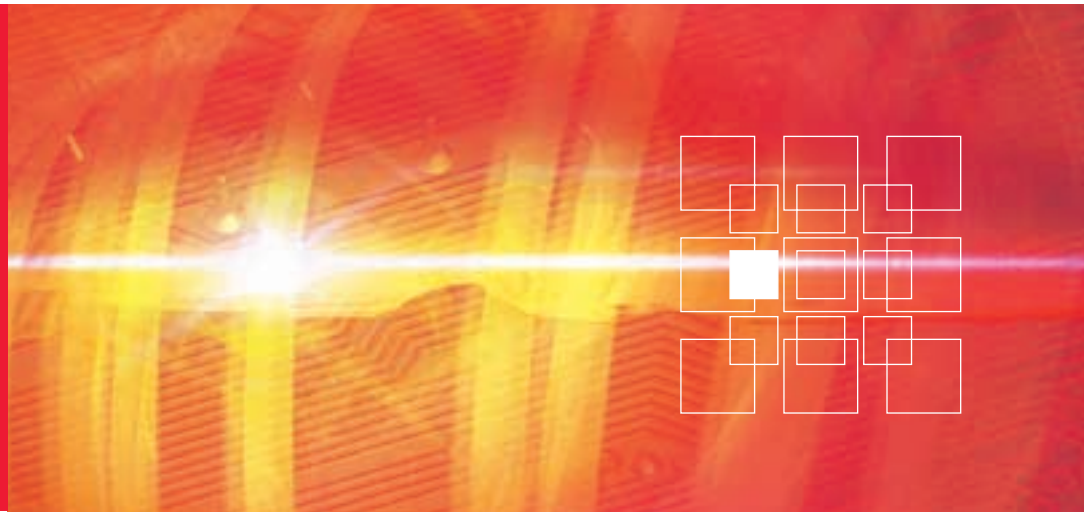
Renesas Microcomputers Developer Tools

Accessory Guide



Renesas Technology

www.renesas.com

Introduction

To meet the needs for target systems that vary from customer to customer, Renesas Technology Corp. provides a wide selection of MCU packages and various types of accessories. These accessories can be used to connect the target and emulator, as well as mount an evaluation MCU on the target when its package is different from that of the actual MCU.

This document presents each of these accessories by describing their outline features, functionality, and dimensions along with photographs. Also included in this document as reference for your target design are the LCC sockets available from partners and foot pattern diagrams shareable between 64-pin, 80-pin, and 100-pin QFP packages.

Contact

Local Renesas Technology sales office or distributor.
Microcomputer Tool Department
Technical support: support_tool@renesas.com
User registration: regist_tool@renesas.com
Home page: http://www.renesas.com/

Precautions

Notes on Handling of Accessory Products

The accessory products presented in this document are designed for use on the laboratory level when debugging or evaluating microcomputer programs.

- Use the accessory products as connecting tools in your debugging or evaluation stage.
- Do not use the accessory products for applications in which they will be incorporated in the final product.
- The accessory products are not guaranteed to perform in all combinations of use. Depending on how they are combined, degradation of characteristics, such as loss of balance or increased contact resistance, may occur.
- The accessory products are consumables and will not be serviced by Renesas.
- We will not assume any responsibility for consequential results arising from the use of the accessory products.

Regarding the Use of the Accessory Products

About the Sealed Conversion Board

- This board allows QFP or SOP foot patterns to be easily materialized on universal boards or other kinds of boards during circuit experiments or for other purposes.
- The seal has an adhesive strength just suitable for pasting temporarily at room temperature or equivalent environment. Do not use it in low or high temperature or high humidity environment tests. Nor can it be used in a vertical orientation or with reverse side up. This is because the board seal may fall off or peel off.

About the Dummy IC

- This is an emulator connecting accessory designed for use in combination with mounting sockets made by Matsushita Electric Works, Ltd.
- Because the dummy IC's electrodes are soldered, it cannot be mounted by soldering as with ordinary LSI packages. The electrodes may separate and scatter.
- This product is fragile. Use caution when handling it. If dropped, electrodes may bend or break.

Regarding Products of Other Manufacturers

Before designing or using partner products listed here, we recommend you contact the manufacturer of your product to get the latest information on specifications and data. For the address to contact, See Appendix G "Contact Addresses for Partner Product".

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Chapter 2 Converter for IC Package

Converter for IC Packages : Exclusively for M32R Family

Converter for IC Packages : Exclusively for M16C Family

Converter for IC Packages : Exclusively for 740 Family 740 Series 75xx Group

Converter for IC Packages : Exclusively for 740 Family

Converter for IC Packages : Exclusively for 4500 Series

General-purpose Product (Pitch Converter Board)

Chapter 4 Sealed Conversion Board

Chapter 5 Temporary Target Board

Chapter 6 Oscillator Board

Chapter 7 LCC Socket

Appendix

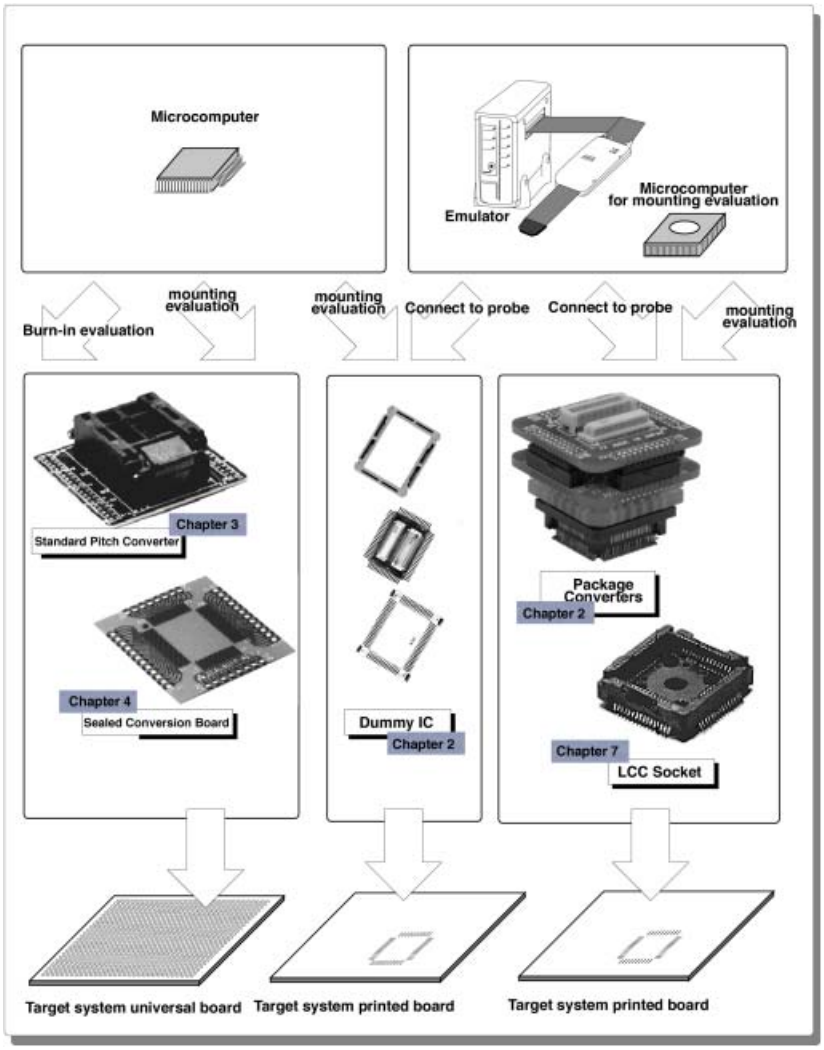
Chapter 1

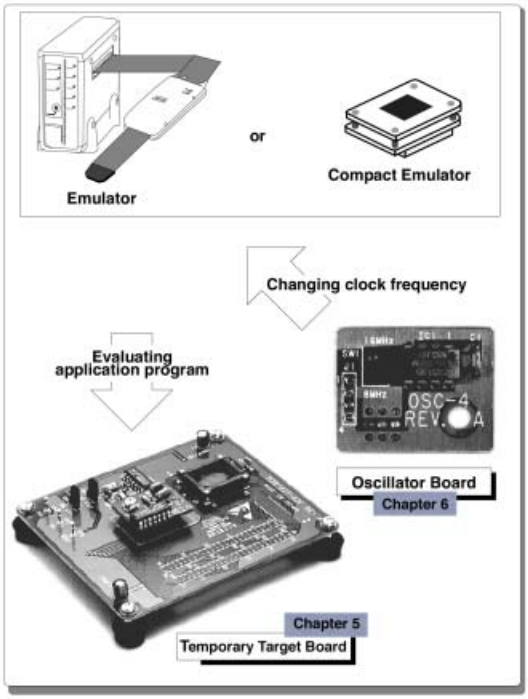
Preface

Guide to Search

Structure of this document

This page introduces accessory tools on application (type) basis.
Refer to the illustlations below.





How to do an effective search for product information

Search for Product types (functionality)

Check a type of the accessory tool in the above figure or on page 10 of "Summary", then take a look at the table of contents and find the type which you want to know about. The accessory tools are classified according to the types (functionalities).

Search for Product names

Refer to Appendix J "Alpabetical Index of Product Names" of this document.

Check out the latest product information

Refer to the following website for the latest information on the accessory tools.
http://www.renesas.com/

Summary

Introduction

To meet the needs for target systems that vary from customer to customer, Renesas Technology Corp. provides a wide selection of MCU packages and various types of accessories. These accessories can be used to connect the target and emulator, as well as mount an evaluation MCU on the target when its package is different from that of the actual MCU.

This document presents each of these accessories by describing their outline features, functionality, and dimensions along with photographs. Also included in this document as reference for your target design are the LCC sockets available from partners and foot pattern diagrams shareable between 64-pin, 80-pin, and 100-pin QFP packages.

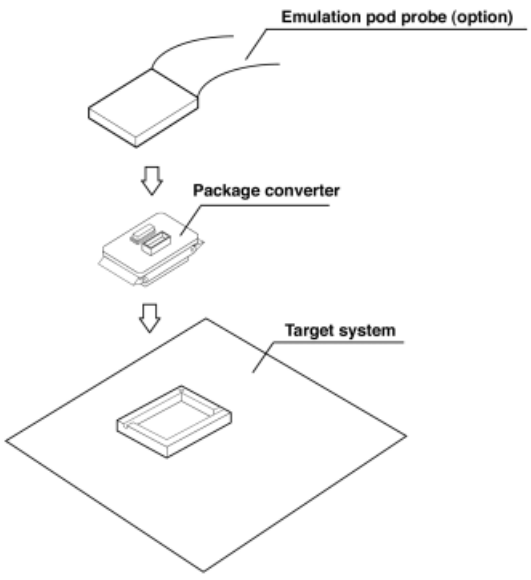
Accessory Tool Type

Accessory tools are grouped in 6 types as follows:

- Package Converter
- Standard Pitch (2.54mm) Converter
- Sealed Conversion Board
- Temporary Target Board
- Oscillator Board
- LCC Socket

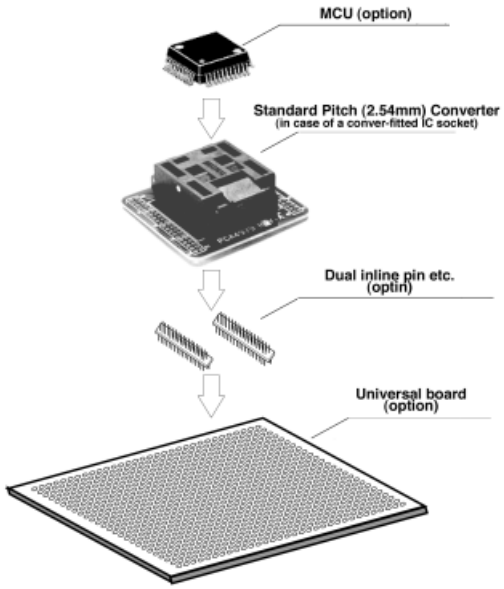
Package Converter

Use this converter to convert the pitch of your MCU or emulator probe to the same pitch as the MCU foot pattern on the target.



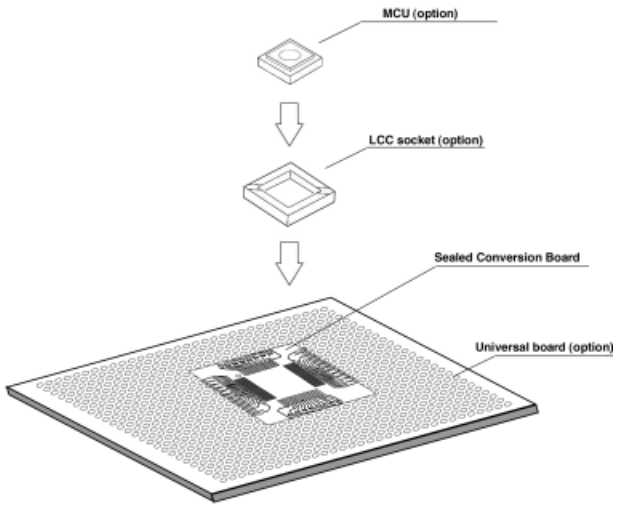
Standard Pitch (2.54mm) Converter

When the user system is built on a universal board, use this converter to convert the pitch of your MCU or emulator probe to the standard pitch.



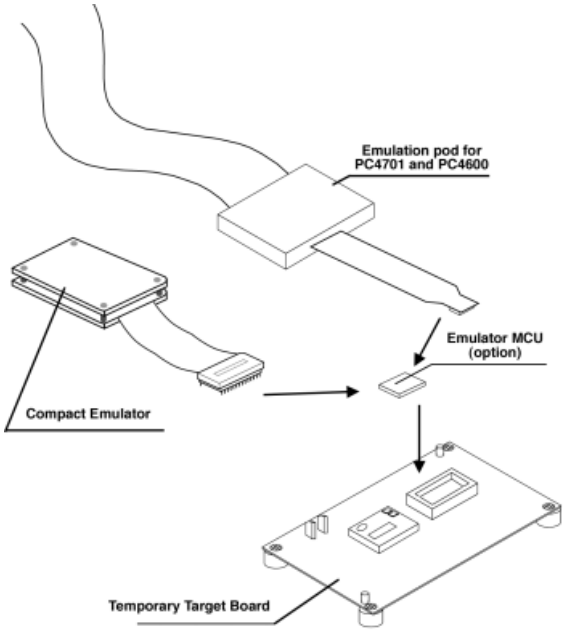
Sealed Conversion Board

This board converts the LCC package MCU or the foot pattern of the IC socket for the same package to the standard-pitch (2.54mm). The sealed conversion board is mounted directly on a universal board and the leads of the sealed conversion board are soldered.



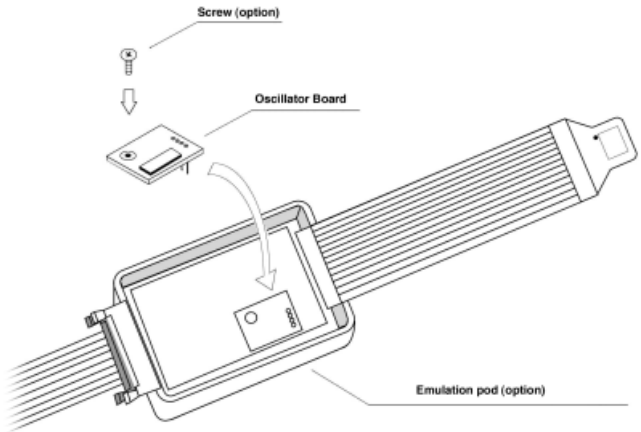
Temporary Target Board (for 8-bit MCU)

This board allows developers to evaluate the emulator MCU independently as a single unit by applying the minimum signals required to operate the emulator MCU (e.g., VCC, GND, CNVSS, clock and RESET). Developers can use this board when wanting to proceed with software development or verify the operation of the PC4701*1 or PC4600*2 system in cases where the target system is not available. Some signals such as VCC, GND and CNVSS must be externally supplied. The RESET signal can be supplied by the emulation pod that is designed for use with the PC4701/PC4600. The clock signal can be taken from the on-board oscillator circuit.



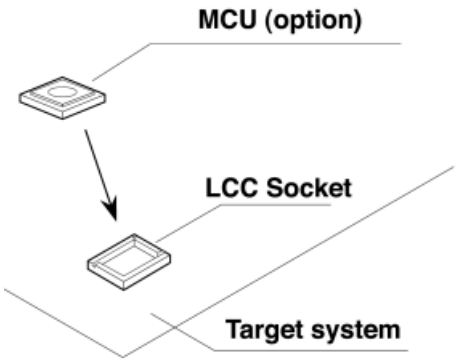
Oscillator Board

This is a clock oscillator circuit board that can be fitted on the emulation pod, temporary target board or other board. Users can mount the desired oscillation module on its board.

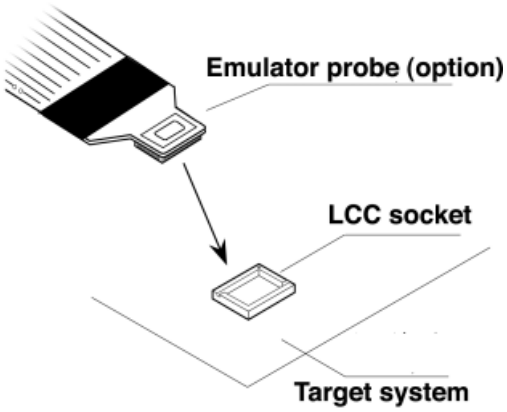


LCC Socket

This is an IC socket developers can use to connect an LCC package MCU to the foot pattern of a QFP package MCU.



or

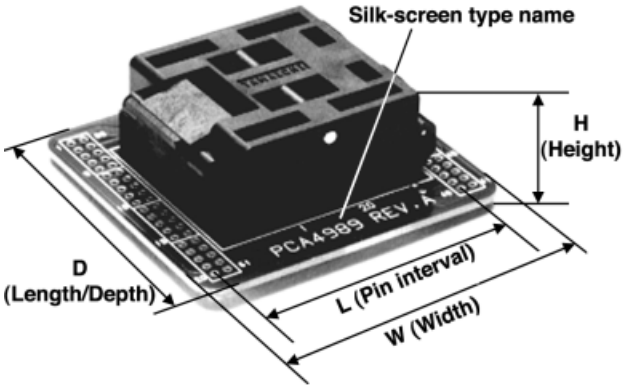


*1. The PC4701 is a generic name representing the PC4701U, PC4701M, PC4701HS, PC4701L, PC4700H, and PC4700L. Production of the PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L has been discontinued.
*2. The PC4600 has been discontinued.

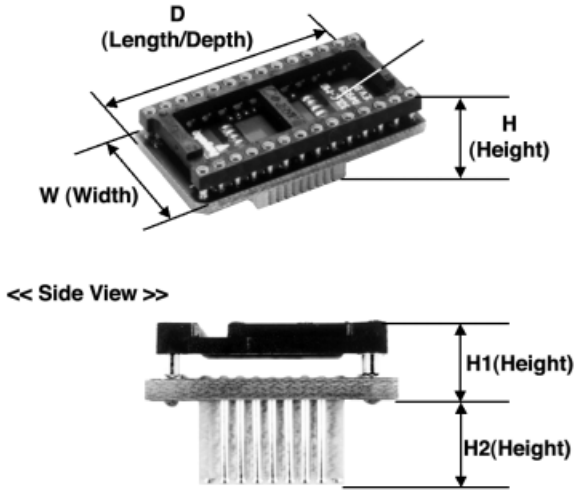
Rules for Tool Accessory Dimensions

Notation	Description
Depth (D)	Dimension from edge to edge on the longest side of the accessory perpendicular to the direction of its silk-screen type name.
Width (W)	Dimension from edge to edge on the longest side of the accessory parallel to the direction of its silk-screen type name.
Height (H)	Dimension from the top of the entire accessory body to the bottom. * Depending on the type of accessory, dimensions H1 and H2 are added.
Pin interval (L)	Dimension from connector terminal to connector terminal when the length between pitches, as for standard pitch converters, is required.
Thickness (T)	Thickness of a board such as the sealed board.

Measurement example (PCA4989)



Measurement example (PCA4933)



Chapter 2

Converter for IC Package

M32170T-PTC

Converter for In-circuit Connection (for 32170, 32174 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter is used exclusively for debugging with the emulator M32100T5-SDI-E, M32100T3-SDI-E, M32100T2-SDI-E or M32100T-SDI-E (Discontinued product) when the target is an M3217xFxxFP of M32R Family 32170 and 32174 Group MCUs and is connected in-circuit with the emulator. It allows debugging such as real-time tracing. It is not only for debugging but also for evaluation by mounting on the target system.

Attaching Procedure

When debugging

(1) Mount NQPACK240SD on the foot pattern on the target system.

(2) On top of (1), mount YQPACK240SD.

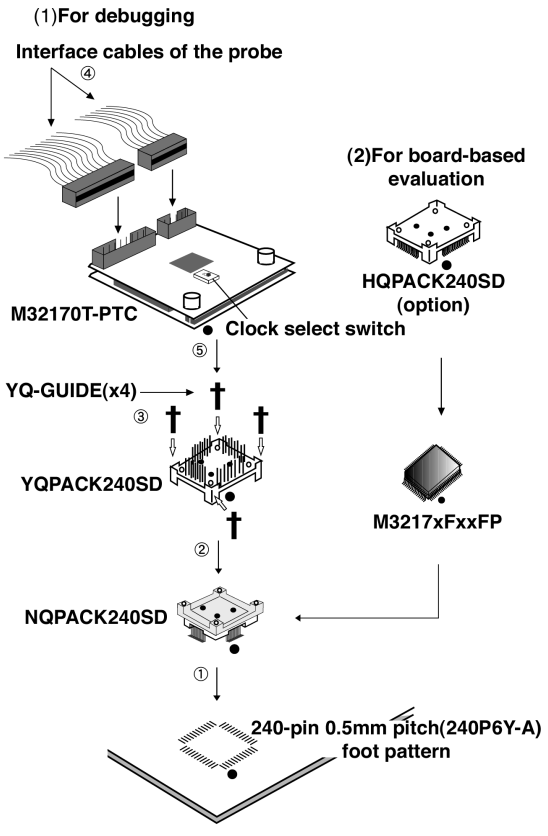
(3) Screw down the YQPACK240SD with YQ-GUIDE's.

(4) Connect the JTAG cable mounted on the probe of the emulator to the M32170T-PTC.

(5) Connect the M32170T-PTC and YQPACK240SD.

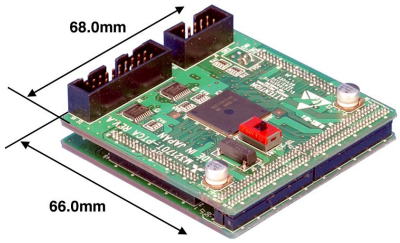
During board-mounted evaluation

On NQPACK240SD mounted on the target system, first put an MCU (M3217xFxxFP), and then the HQPACK240SD (option).

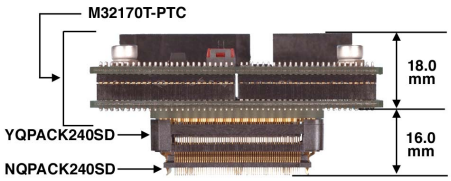


*. ①~⑤ show the connecting procedure.
*. ● No. 1 pin

External View and Dimensions



《 Side view 》

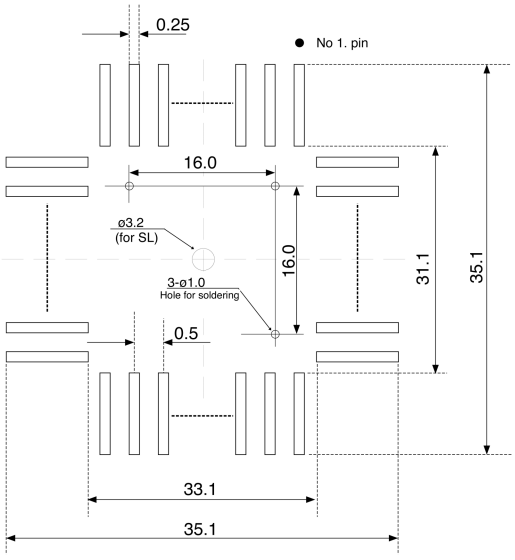


Package Components

- M32170T-PTC converter
- YQPACK240SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK240SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M32171T-PTC

Converter for In-circuit Connection (for 32171 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter is used exclusively for debugging with the emulator M32100T5-SDI-E, M32100T3-SDI-E, M32100T2-SDI-E or M32100T-SDI-E (Discontinued product) when the target is an M32171FxxFP of M32R Family 32171 Group MCUs and is connected in-circuit with the emulator. It allows debugging such as real-time tracing. It is not only for debugging but also for evaluation by mounting on the target system.

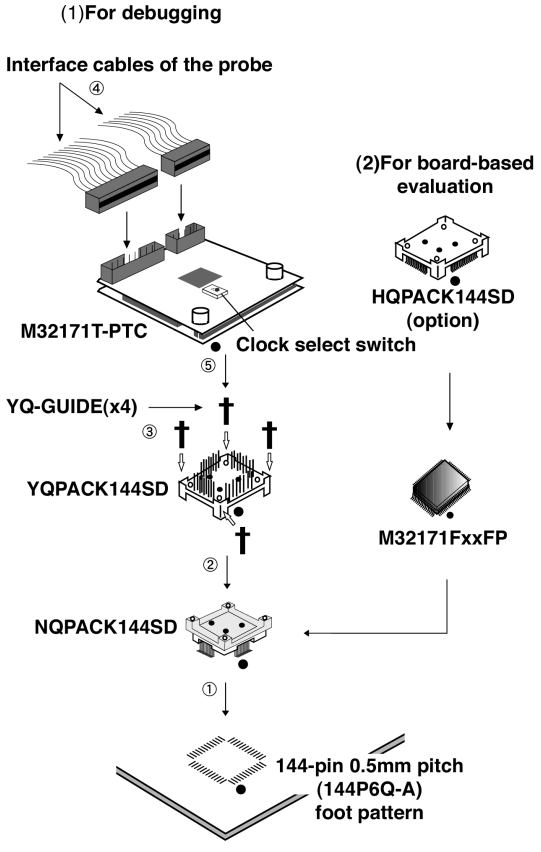
Attaching Procedure

When debugging

(1) Mount the NQPACK144SD on the foot pattern on the target system.
(2) On top of (1), mount YQPACK144SD.
(3) Screw down the YQPACK144SD with YQ-GUIDE's.
(4) Connect the JTAG cables on the probe of the emulator to M32171T-PTC.
(5)Y Connect YQPACK144SD and M32171T-PTC.

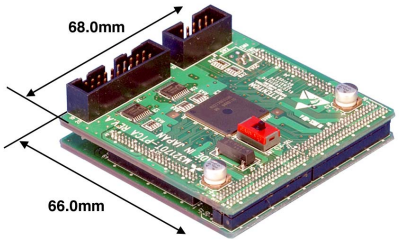
During board-mounted evaluation

On NQPACK144SD mounted on the target system, first put an MCU (M32171FxxFP), and then the HQPACK144SD (option).

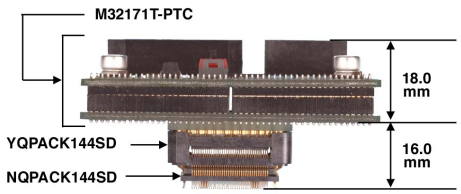


*. ①~⑤ show the connecting procedure.
*. No. 1 pin

External View and Dimensions



《 Side view 》

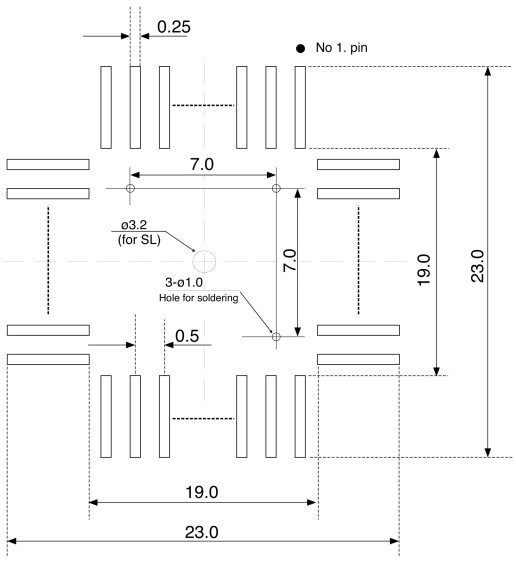


Package Components

- M32171T-PTC converter
- YQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M32173T-PTC

Converter for In-circuit Connection (for 32172, 32173 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter is used exclusively for debugging with the emulator M32100T5-SDI-E, M32100T3-SDI-E, M32100T2-SDI-E or M32100T-SDI-E (Discontinued product) when the target is an M3217xFxxFP of M32R Family 32172 and 32173 Group MCUs and is connected in-circuit with the emulator. It allows debugging such as real-time tracing. It is not only for debugging but also for evaluation by mounting on the target system.

Attaching Procedure

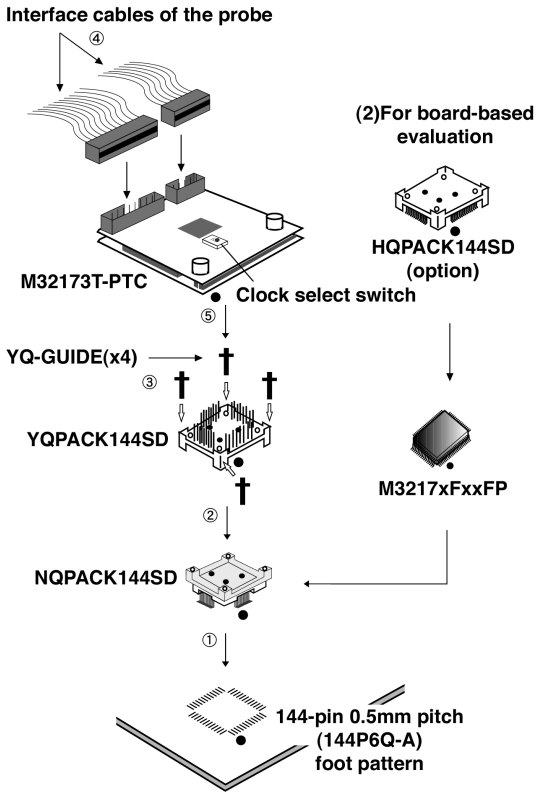
When debugging

(1) Mount the NQPACK144SD on the foot pattern on the target system.
(2) On top of (1), mount YQPACK144SD.
(3) Screw down the YQPACK144SD with YQ-GUIDE's.
(4) Connect the JTAG cables on the probe of the emulator to M32173T-PTC.
(5) Connect YQPACK144SD and M32173T-PTC.

During board-mounted evaluation

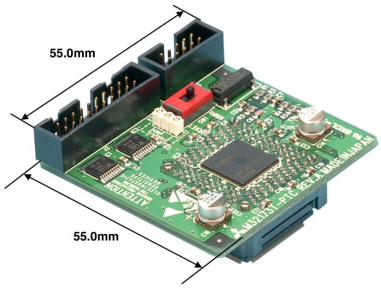
On NQPACK144SD mounted on the target system, first put an MCU (M3217xFxxFP), and then the HQPACK144SD (option).

(1)**For debugging**

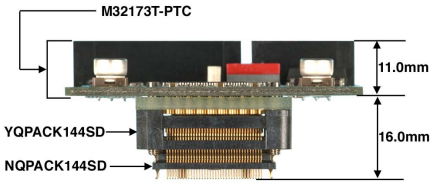


*. ①~⑤ **show the connecting procedure.**
*. **No. 1 pin**

External View and Dimensions



《 Side view 》

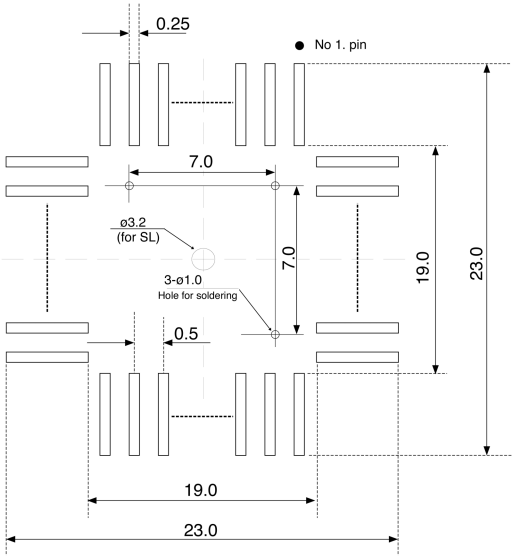


Package Components

- M32173T-PTC converter
- YQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M32176T-PTC

Converter Board for In-circuit Connection (for 32176 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter is used exclusively for debugging with the emulator M32100T5-SDI-E, M32100T3-SDI-E, M32100T2-SDI-E or M32100T-SDI-E (Discontinued product) when the target is an M32176FxxFP of M32R Family 32176 Group MCUs and is connected in-circuit with the emulator. It allows debugging such as real-time tracing. It is not only for debugging but also for evaluation by mounting on the target system.

Attaching Procedure

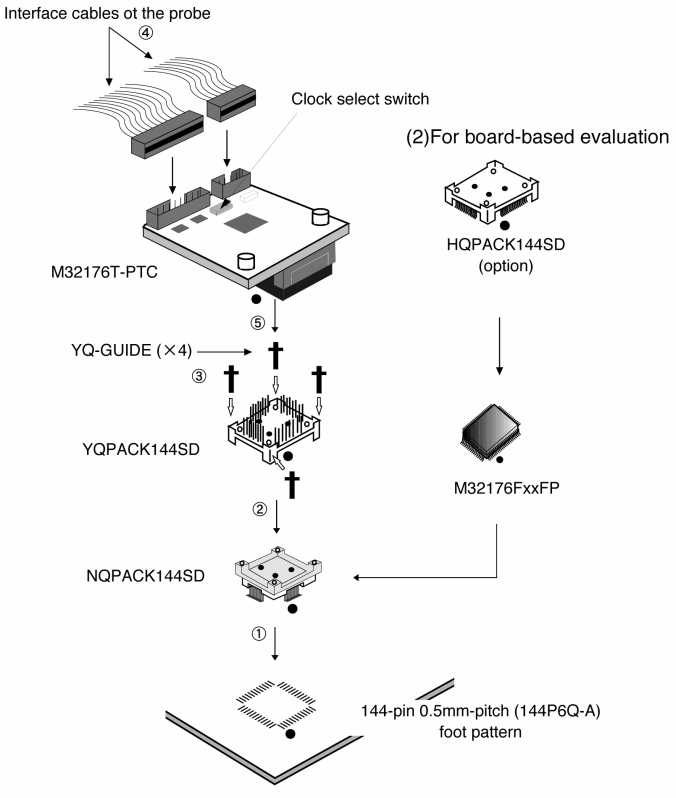
When debugging

(1) Mount the NQPACK144SD on the foot pattern on the target system.
(2) On top of (1), mount YQPACK144SD.
(3) Screw down the YQPACK144SD with YQ-GUIDE's.
(4) Connect the JTAG cables on the probe of the emulator to M32176T-PTC.
(5) Connect YQPACK144SD and M32176T-PTC.

During board-mounted evaluation

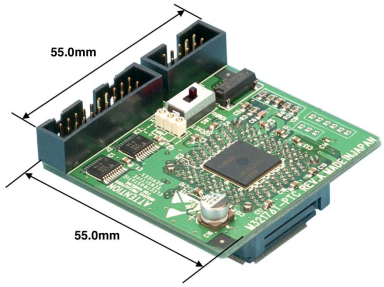
On NQPACK144SD mounted on the target system, first put an MCU (M32176FxxFP), and then the HQPACK144SD (option).

(1) For debugging

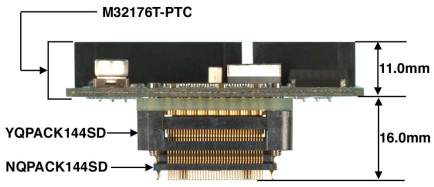


* ① to áD show the connecting procedure.
* ●: No.1 pin

External View and Dimensions



<< Side View >>

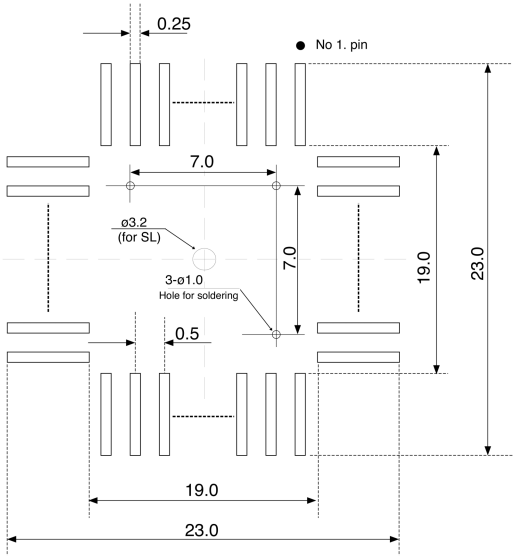


Package Components

- M32176T-PTC converter
- YQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M32182T2-PTC

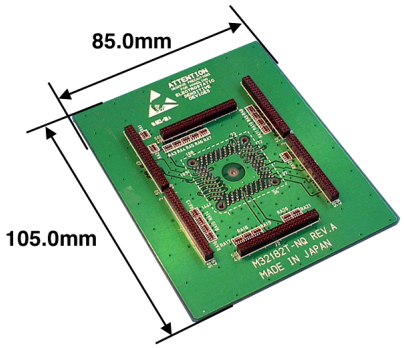
Converter for In-circuit Connection (for M32182 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

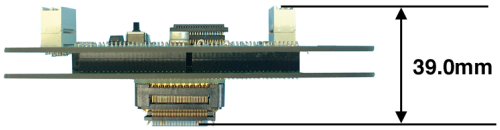
Function

The M32182T2-PTC is a converter for featuring the debugging function such as real-time tracing when using emulators M32100T5-SDI-E, M32100T3-SDI-E, M32100T2-SDI-E or M32170T-SDI(Discontinued product) or M32100T-SDI-E (Discontinued product) with the M32182FxxFP.

External and dimension



《Side View》



Package Components

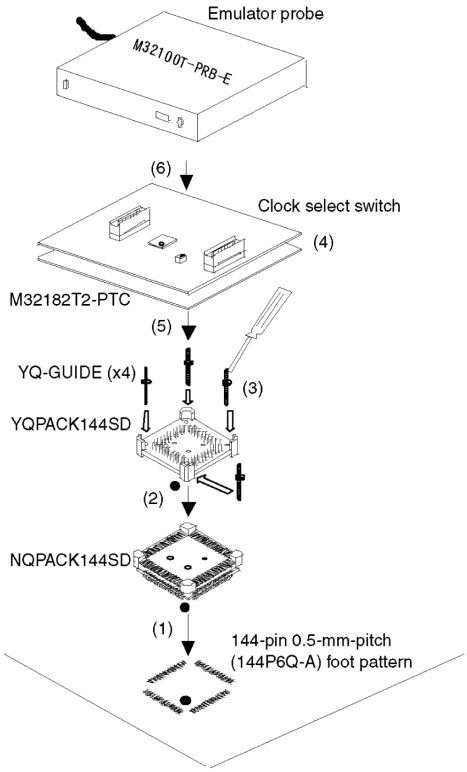
- M32182T2-PTC converter
- YQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Attaching Procedure

For the M32100T2-SDI-E and M32100T3-SDI-E (When debugging)

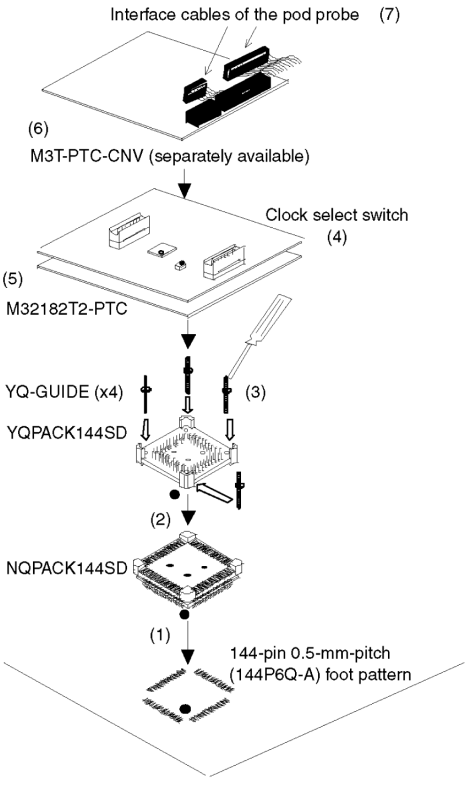
(1) Mount NQPACK144SD on the foot pattern on the target system.
(2) On top of (1), mount YQPACK144SD.
(3) Screw down the YQPACK144SD with YQ-GUIDE's.
(4) Set the clock select switch.
(5) Mount the M32182T2-PTC on the YQPACK144SD.
(6) Connect the emulator probe to the M32182T2-PTC.



●: Position of No. 1 pin
Be sure to match the position of No. 1 pin of the foot pattern and each part.

For the M32100T-SDI-E and M32170T-SDI (When debugging)

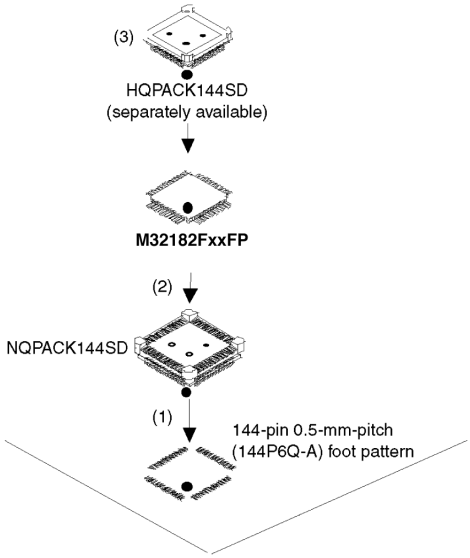
(1) Mount NQPACK144SD on the foot pattern on the target system.
(2) On top of (1), mount YQPACK144SD.
(3) Screw down the YQPACK144SD with YQ-GUIDE's.
(4) Set the clock select switch.
(5) Mount the M32182T2-PTC on the YQPACK144SD.
(6) Mount the M3T-PTC-CNV on the M32182T2-PTC.
(7) Connect the probe of the emulation pod and the M32182T2-PTC via the SDI MCU control interface cable and the SDI trace interface cable.



●: Position of No. 1 pin
Be sure to match the position of No. 1 pin of the foot pattern and each part.

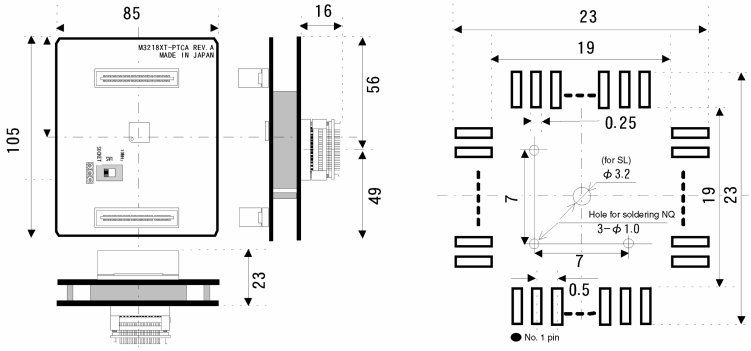
During board-mounted evaluation

(1) Mount the NQPACK144SD.
(2) Mount the M32182FxxFP on the NQPACK144SD.
(3) Mount the HQPACK144SD (option) on the NQPACK144SD.



●: Position of No. 1 pin
Be sure to match the position of No. 1 pin of the foot pattern and each part.

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M30100T-PTC

Converter for Connecting 32-pin 0.8mm-pitch QFP for M30100T-PRB (for M16C/10 Group M30100)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M30100T-PTC is a converter board for M30100 Group for connecting the pod probe M30100T-PRB to the footpattern for 0.8-mm-pitch QFP (32P6U-A).

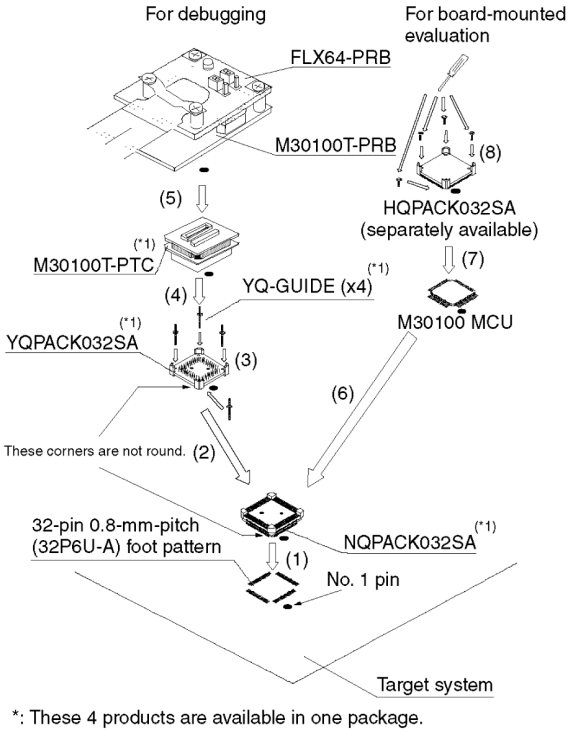
Attaching Procedure

When debugging

(1) Mount NQPACK032SA on the foot pattern on the target system.
(2) On the top of (1), mount YQPACK032SA.
(3) Screw down the YQPACK032SA with YQ-GUIDE's.
(4) Connect the YQPACK032SA and M30100T-PTC.
(5) Connect the pod probe M30100T-PRB to the upper connector of M30100T-PTC for use.

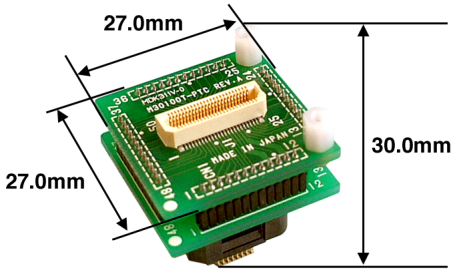
During board-mounted evaluation

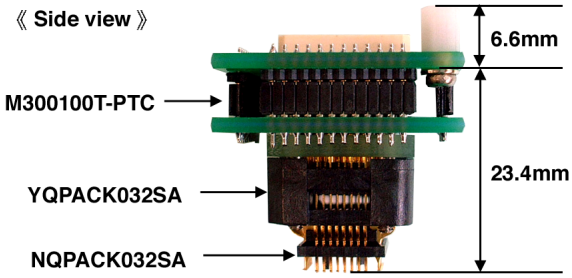
Mount the M30100 MCU and the HQPACK032SA (separately available) in that order on the NQPACK032SA on the target system.



*: These 4 products are available in one package.

External View and Dimensions



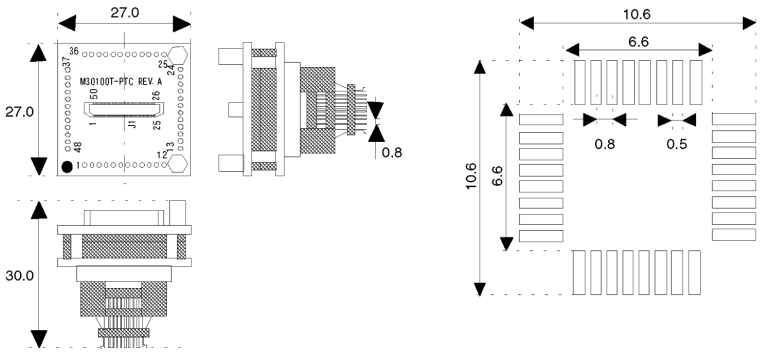


Package Components

- M30100T-PTC converter
- YQPACK032SA (made by Tokyo Eletech Co., Ltd.)
- NQPACK032SA (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M30102T-PTC

Converter for Connecting 48-pin 0.5mm-pitch QFP for M30100T-PRB (for M16C/10 Group M30102)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M30102T-PTC is a converter board for M30102 Group for connecting the pod probe M30100T-PRB to the footpattern for 0.5-mm-pitch QFP (48P6Q-A).

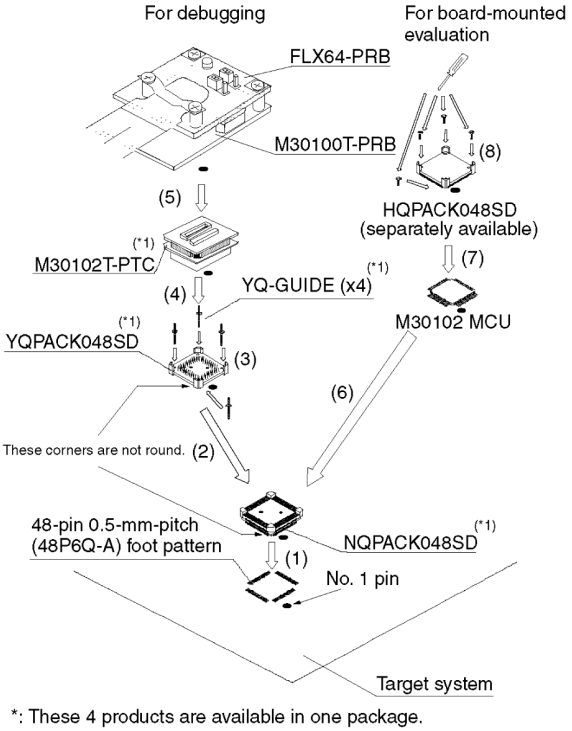
Attaching Procedure

When debugging

(1) Mount NQPACK048SD on the foot pattern on the target system.
(2 On the top of (1), mount YQPACK048SD.
(3) Screw down the YQPACK048SD with YQ-GUIDE's.
(4) Connect the YQPACK048SD and M30102T-PTC.
(5) Connect the pod probe M30100T-PRB to the upper connector of M30102T-PTC for use.

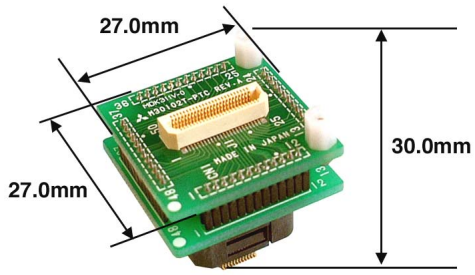
During board-mounted evaluation

Mount the M30102 MCU and the HQPACK048SD (separately available) in that order on the NQPACK048SD on the target system.

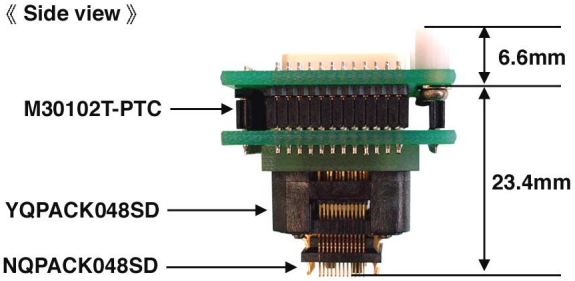


*: These 4 products are available in one package.

External View and Dimensions



《 Side view 》

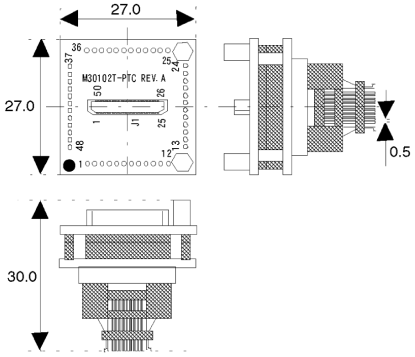


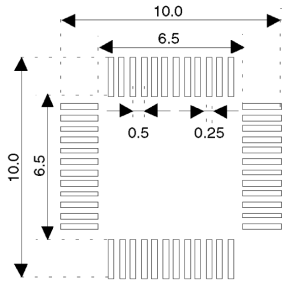
Package Components

- M30102T-PTC converter
- YQPACK048SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK048SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)





[Ordering Information] See Appendix H "Ordering Information".

M30201T-52SP

Converter for Connecting Pod Probe M30201T-PRB to 52-pin 1.778mm-pitch SDIP (for M30201 Group)

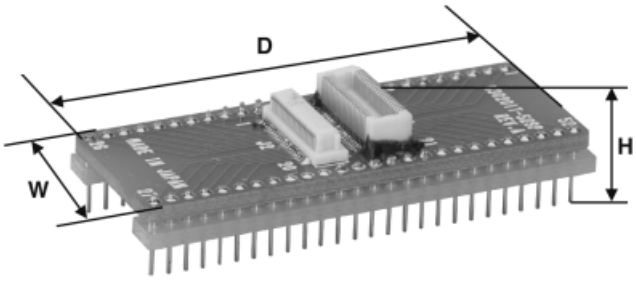
REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M30201T-52SP is a board for the M30201 Group to convert pod probe M30201T-PRB to 52-pin 1.778mm-pitch SDIP (52P4B).

Application

Use the M30201T-52SP to insert it into the SDIP socket on the target and to insert the emulation pod probe M30201T-PRB into the socket on the M30201T-52SP.



Dimensions

47.0(D)×19.0(W)×11.8(H)mm

Pin Diameter

ø 0.46mm

[Ordering Information] See Appendix H "Ordering Information".

M30201T-56FP

Converter for Connecting Pod Probe M30201T-PRB to 56-pin 0.65mm-pitch QFP (for M30201 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M201T-56FP is a converter for the M30201 Group for connecting the emulation pod probe M30201T-PRB to a foot pattern of a 56-pin 0.65mm-pitch QFP (56P6S-A).

Application

Mount TQPACK056SB on the foot pattern on the target system. On top of it, mount TQSOCKET056SBP, TQSOCKET056SBF and M30201T-56FP in that order. Then connect the probe M30201T-PRB of the emulation pod to the connector provided at the top of the M30201T-56FP.

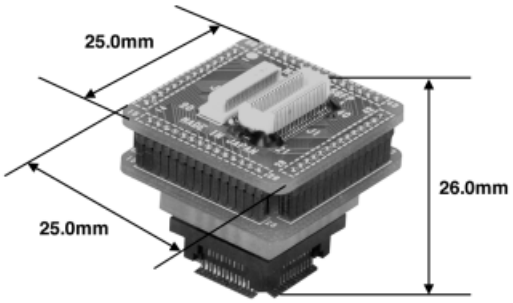
Package Components

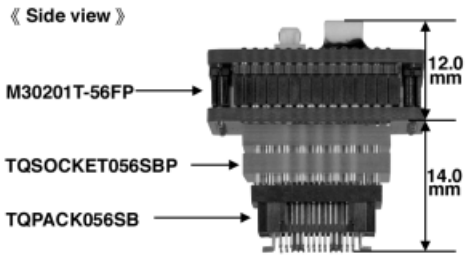
- M30201T-56FP
- TQSOCKET056SBP (made by Tokyo Eletech Co., Ltd.)
- TQPACK056SB (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

[Ordering Information] See Appendix H "Ordering Information".

External View and Dimensions





M30262T-PTC

Converter Board for M16C/26 Group M30262 (for M16C/Tiny Series)

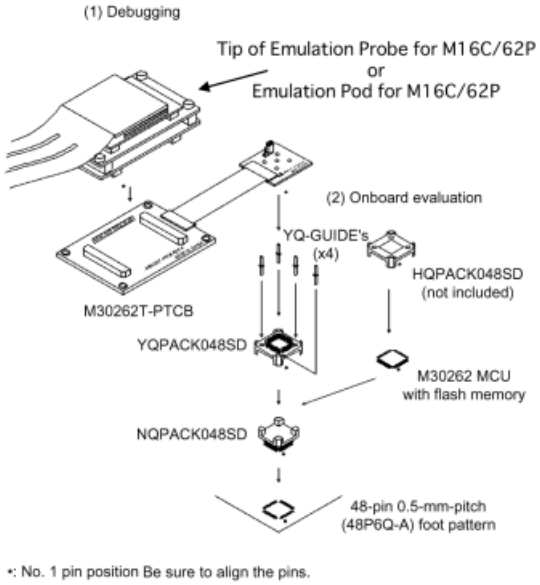
REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M30262T-PTC is a converter board for the M16C/26 Group M30262 for connecting an emulator for the M16C/62P[*1] to M30262 (48P6Q-A). You can debug for M30262 when M30262T-PTC connected to the emulator for the M16C/62P (Tip of emulation probe or emulation pod).

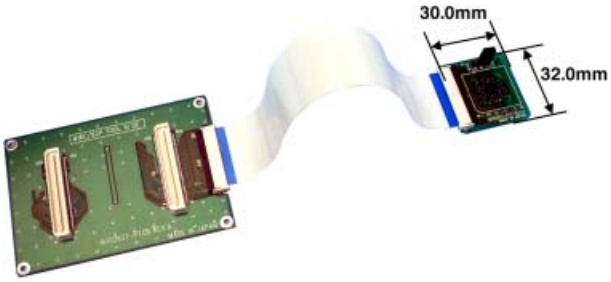
*1:Emulators for the M16C/62P are the following.
• Emulator System PC7501 + Emulation Probe M3062PT-EPB
• Emulator System PC4701 + Emulation Pod M3062PT3-RPD-E

Attaching Procedure



*: No. 1 pin position Be sure to align the pins.

External View and Dimensions

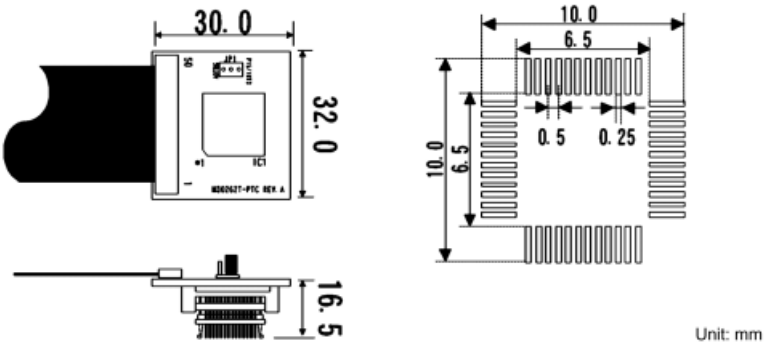


Package Components

• M30262T-PTC converter
• YQPACK048SD (made by Tokyo Eletech Co., Ltd.)
• NQPACK048SD (made by Tokyo Eletech Co., Ltd.)
• YQ-GUIDE (× 4)
• User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

External Dimensions of the M30262T-PTC (Connector) and Recommended Foot Pattern



Unit: mm

[Ordering Information] See Appendix H "Ordering Information".

M3062PT-80FPB

Converter Board for Connecting 160-core Flexible Board FLX160 to 80-pin 0.65mm-pitch QFP (for M16C/60 Series)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3062PT-80FPB is a converter for connecting the FLX160 160-core flexible board to a foot pattern of a 80-pin 0.65mm-pitch QFP (80P6S-A) for M16C/60 Series. This converter can be used during debugging and board-mounted evaluation in common.

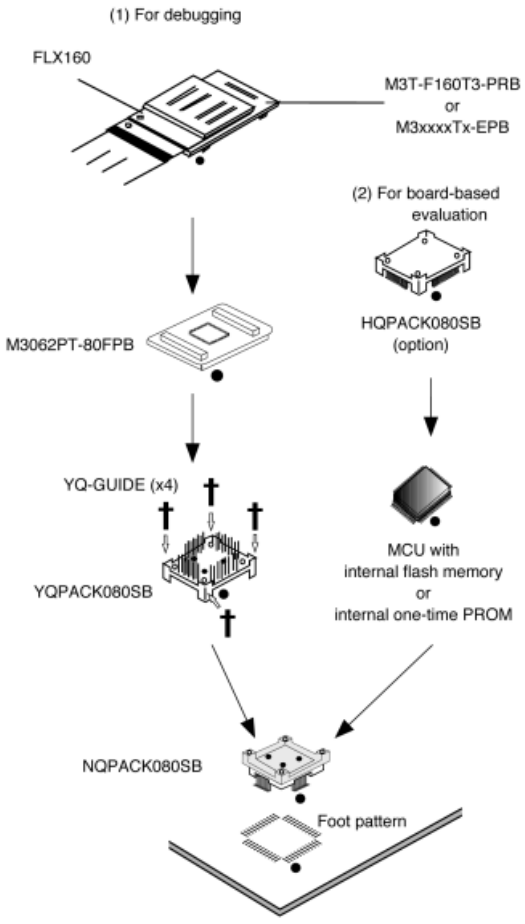
Attaching Procedure

When debugging

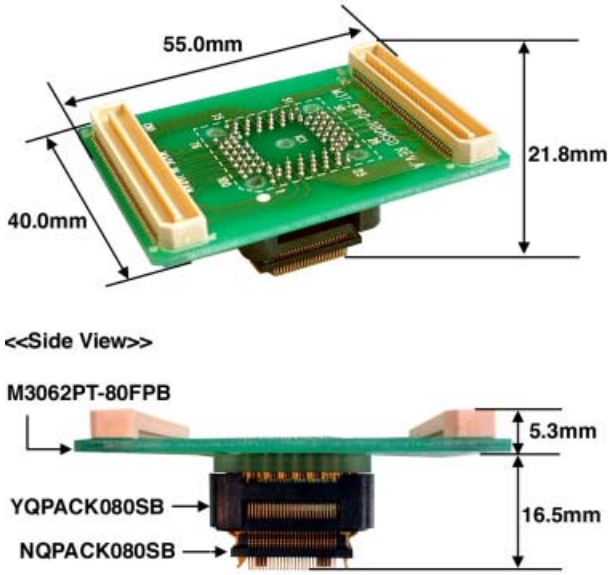
(1) Mount the NQPACK080SB on the foot pattern of the target system.
(2) Attach the YQPACK080SB on top of (1).
(3) Screw down the YQPACK080SB with YQ-GUIDE's.
(4) Connect the probe of top of emulator to the upper connector of the M3062PT-80FPB.
(5) Connect the YQPACK080SB and M3062PT-80FPB together for use.

During board-mounted evaluation

On top of NQPACK080SB that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK080SB (option) in that order.



External View and Dimensions

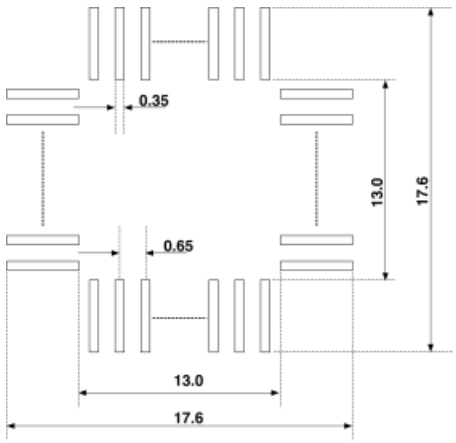


Package Components

- M3062PT-80FPB converter
- YQPACK080SB (made by Tokyo Eletech Co., Ltd.)
- NQPACK080SB (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M3T-100LCC-80QSB

Converter from 100-pin 0.65mm-pitch LCC to 80-pin 0.65mm-pitch QFP (for M16C/60 Series)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter connects a 100-pin 0.65mm-pitch LCC (100D0) to the foot pattern for the 80-pin 0.65mm-pitch QFP (80P6S-A). Use this board to convert packages from the 100-pin LCC package for the M16C/60 Series MCU to the 80-pin QFP foot pattern.

Application

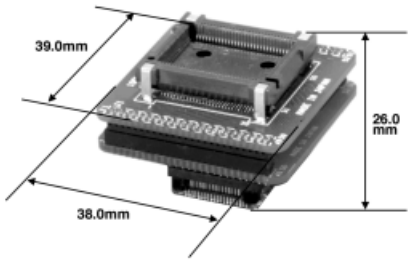
Solder the TQPACK080SB (included with the product) to the foot pattern for 80-pin 0.65mm-pitch QFP (80P6S-A) provided on the target. By attaching M3T-FLX-100LCC to the connector provided on this board you can connect an emulation pod for the M16C/60 Series and this board.

Package Components

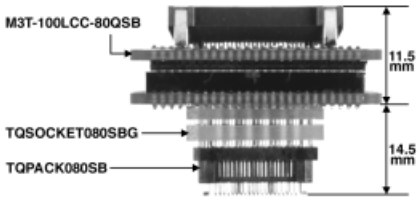
- M3T-100LCC-80QSB
- TQSOCKET080SBG (made by Tokyo Eletech Co., Ltd.)
- TQPACK080SB (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

External View and Dimensions



《Side View》



Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."

[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-DCT613

Converter for Connecting 100-core Flexible Board FLX100 to M3T-DIRECT80S or M3T-FLX-80QSB (for M16C/60 Series)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

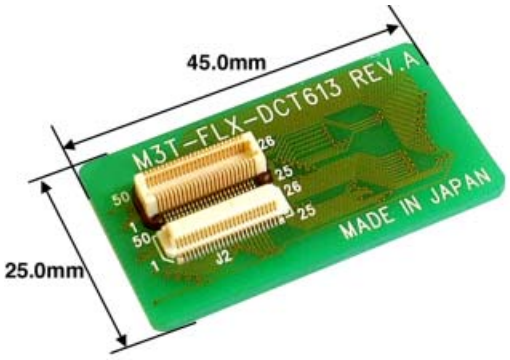
This converter connects an emulation pod for the M16C/60 Series to the connector provided at the top of the General-purpose Product, M3T-FLX-80QSB or direct dummy IC, M3T-DIRECT80S.

Application

Use this converter when you have M3T-DIRECT80S (for 80-pin 0.65mm-pitch QFP packages) mounted on the target system and want to connect an emulation pod for the M16C/60 Series to the target system.

[Ordering Information] See Appendix H "Ordering Information".

External View and Dimensions



《 Side view 》

M37515T-PTC

Converter for Connecting 64-core Flexible Board FLX64 (or M3T-64DIP-DMS) to 48-pin 0.5mm-pitch LQFP (for 7515 and 7516 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter is used exclusively for the 7515 Group to connect the 64-core flexible board (FLX64) or 64-pin emulator MCU connecting board (M3T-64DIP-DMS) to the foot pattern for the 48-pin 0.5mm-pitch LQFP (48P6D-A).

Application

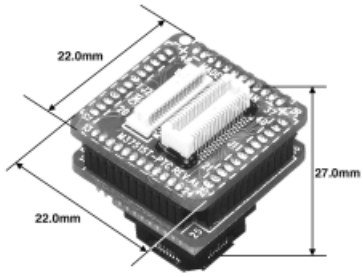
Solder the TQPACK048SD (included with this converter) to the foot pattern for the 48-pin 0.5mm-pitch LQFP (48P6D-A) on the target. Then attach the flexible board connected to the emulation pod, such as FLX64, to the connector provided on this board. Also, by fitting M3T-64LCC-DMS to the connector provided on this board, you can attach the RSS-type emulator MCU or EPROM-version MCU to the target.

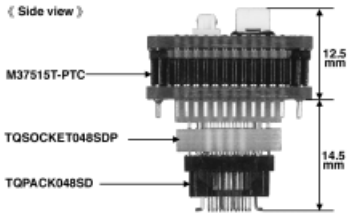
Package Components

- M37515T-PTC
- TQSOCKET048SDP (made by Tokyo Eletech Co., Ltd.)
- TQPACK048SD (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

External View and Dimensions





Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."

[Ordering Information] See Appendix H "Ordering Information".

M37530T-PTC

Converter for Connecting 42-pin 1.778mm-pitch SDIP to a 40-pin Narrow-pitch Connector (for 7531, 7540, 7542 and 7544 Groups)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

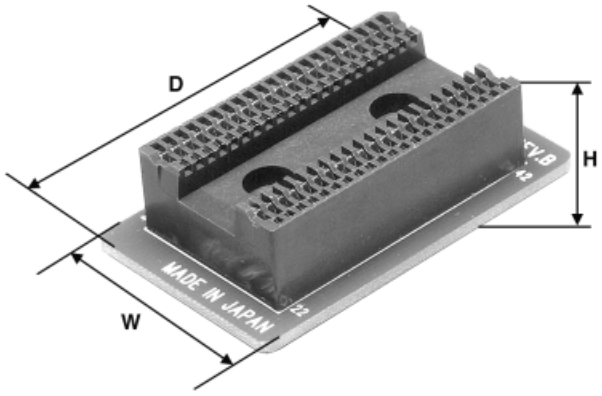
This board converts connectors from the 42-pin 1.778mm-pitch SDIP (42P4B) for the 7531,7540,7542 and 7544 Groups of Renesas 8-bit MCUs to a 40-pin narrow-pitch connector.

Application

Connect this converter and the dummy IC M3T-SSOP36B-450 for the 36-pin 0.8mm-pitch SSOPs or the conversion board M37530T-PTCB for the 32-pin 0.8mm-pitch LQFPs that is mounted on the target system. Then connect an emulator MCU (e.g., M37531RSS) to the converter.

Dimensions

50.0(D)×30.0(W)×17.0(H)mm



[Ordering Information] See Appendix H "Ordering Information".

M37530T-PTCB

Converter for Connecting 40-pin Narrow-pitch Connector to 32-pin 0.8mm-pitch LQFP (for 7531, 7532, 7534, 7540, 7542 and 7544 Groups)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This board is used in combination with the M37530T-PTC converter for the 7531, 7532, 7534, 7540, 7542 and 7544 Groups of Renesas 8-bit MCUs or the M37532T-PTC converter for the 7532 and 7534 Groups to connect a 40-pin narrow-pitch connector to the foot pattern for the 32-pin 0.8mm-pitch LQFP (32P6B-A).

Application

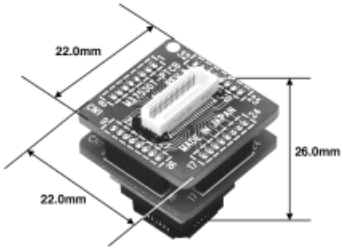
Solder the TQPACK032SA (included with this converter) to the foot pattern for the 32-pin 0.8mm-pitch LQFP (32P6B-A) on the target system. Then attach the M37530T-PTC or M37532T-PTC converter to the connector provided on this board.

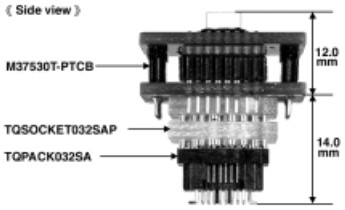
Package Components

- M37530T-PTCB
- TQSOCKET032SAP (made by Tokyo Eletech Co., Ltd.)
- TQPACK032SA (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

External View and Dimensions





Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."

[Ordering Information] See Appendix H "Ordering Information".

M37530T-PTCC

Converter for Connecting 42-pin RSS Type Emulator MCU to 32-pin 1.778mm-pitch SDIP (for 7531, 7540, 7542 and 7544 Groups)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This board converts the pin assignment of the 42-pin RSS type of emulator MCU (M37531RSS, M37540RSS, M37542RSS, M37544RSS) to that of the 32-pin 1.778mm-pitch SDIP (M37531Mx-XXXSP and so on).

Application

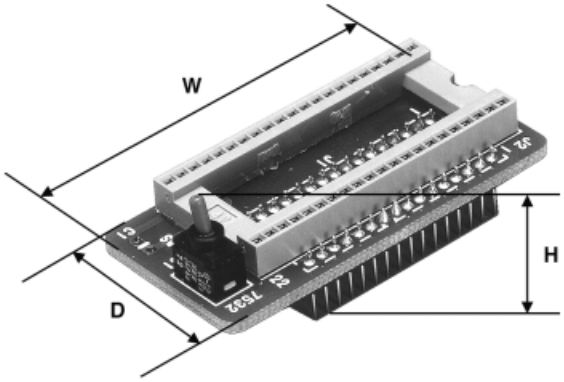
Use the M37530T-PTCC to insert it into the 32-pin SDIP socket on the target and to insert the emulation pod probe into the socket on the M37530T-PTCC.

Dimensions

23.0(D)×47.0(W)×18.0(H)mm

Pin Diameter

ø 0.45mm



[Ordering Information] See Appendix H "Ordering Information".

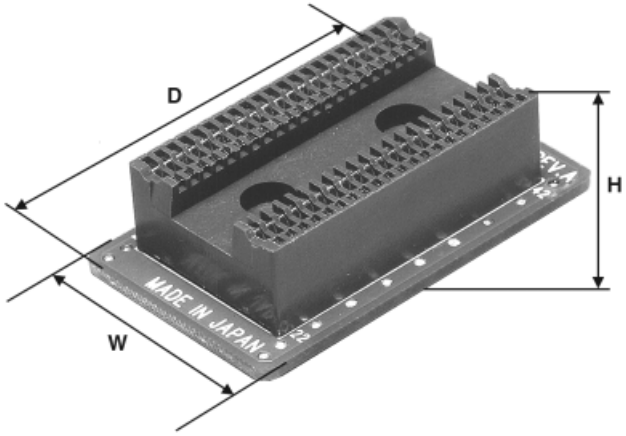
M37532T-PTC

Converter for Connecting 42-pin 1.778mm-pitch SDIP to a 40-pin Narrow-pitch Connector (for 7532 and 7534 Groups)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This board converts connectors from the 42-pin 1.778mm-pitch SDIP (42P4B) for the 7532 and 7534 Groups of Renesas 8-bit MCUs to a 40-pin narrow-pitch connector.



Application

Connect this converter and the dummy IC M3T-SSOP36B-450 for the 36-pin 0.8mm-pitch SSOPs or the conversion board M37530T-PTCB for the 32-pin 0.8mm-pitch LQFPs that is mounted on the target system. Then connect an emulator MCU (e.g., M37532RSS) to the converter.

Dimensions

50.0(D)×30.0(W)×17.0(H)mm

[Ordering Information] See Appendix H "Ordering Information".

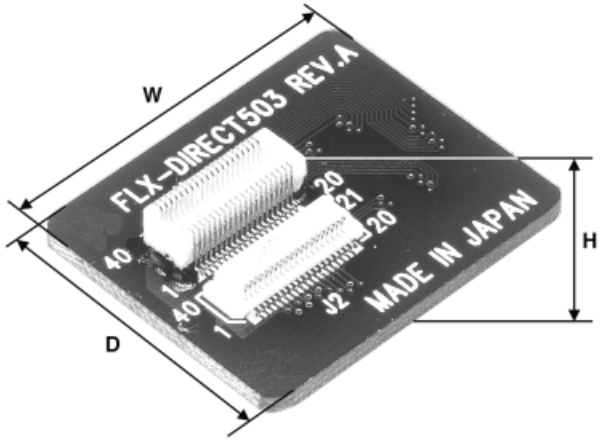
M3T-FLX-DCT503

Board for Converting Pin Assignments to Connect the M37515T-RPD (for 7515 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The emulation pod (M37515T-RPD) for the 7515 Group of Renesas 8-bit MCUs has a 64-core flexible cable board (FLX64) attached at the probe tip. Therefore, this board is used to convert the 64-pin compatible probe tip to a 42-pin compatible pin assignment for the 3850 Group.



Application

Connect this board and the direct dummy IC (M3T-DCT42B-450) for 42-pin 0.8mm-pitch SSOP (42P2R-A) that is mounted on the target system. Then connect the tip of the emulation pod (M37515T-RPD) to the board.

Dimensions

25.0(D)×30.0(W)×10.0(H)mm

[Ordering Information] See Appendix H "Ordering Information".

M38007T-PRB

Converter for Connecting 64-pin RSS Type Emulator MCU to 64-pin 0.5, 0.65 and 0.8mm-pitch QFP Target

REJ01J0001-0100Z
Rev.1.00
2004.04.16

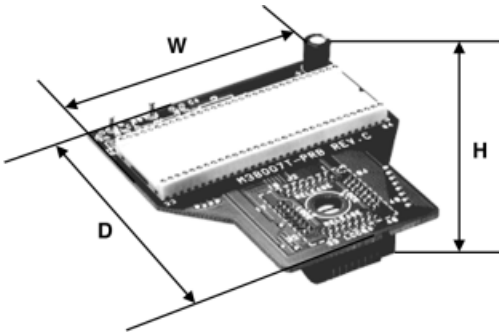
Function

The M38007T-PRB is a board to convert the pin assignment of 64-pin RSS type emulator MCU to that of 64-pin 0.5mm-pitch, 0.65mm-pitch and 0.8mm-pitch QFP.

Application

Use the M38007T-PRB to insert RSS type emulator MCU into the M38007T-PRB socket.

- When the target MCU is 64-pin 0.5mm-pitch QFP
  The M3T-64LCC-QSD IC package converter is required. Use the M3T-64LCC-QSD to solder it to the target and to insert the M38007T-PBR into the M3T-64D0-64P6S socket.
- When the target MCU is 64-pin 0.65mm-pitch QFP
  The M3T-64D0-64P6S IC package converter is required. Use the M3T-64D0-64P6S to solder it to the target and to insert the M38007T-PBR into the M3T-64D0-64P6S socket.
- When the target MCU is 64-pin 0.8mm-pitch QFP
  The LCC socket is required on the target. Use the M38007T-PRB to insert the LCC socket on the target.



Dimensions

67.6(D)×62.0(W)×25.0(H)mm

[Ordering Information] See Appendix H "Ordering Information".

M38C29T-64FPD

Converter from 100-pin RFS Type Emulator MCU to 64-pin 0.5mm-pitch LQFP (for 38C1, 38C2, 38K0 and 38K2 Group of 38000 Series)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M38C29T-64FPD is a board to connect the 100-pin RFS type emulator MCU (M38C13RLFS, M38C29RLFS, M38K09RFS and M38K29RFS) to the foot pattern of 64-pin 0.5mm-pitch LQFP (64P6Q-A).

Package Components

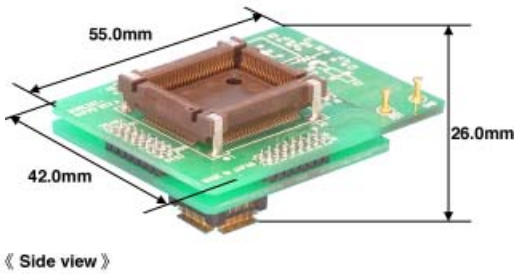
- M38C29T-64FPD
- TQSOCKET64SDG (made by Tokyo Eletech Co., Ltd.)
- TQPACK64SD (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

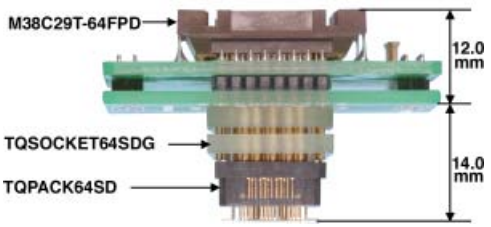
Attaching Procedure

(1) Solder the TQPACK64SD under this board to the foot pattern on the target system.
(2) Insert the RFS type emulator MCU to the socket on the M38C29T-64FPD.

External and dimension



《 Side view 》



[Ordering Information] See Appendix H "Ordering Information".

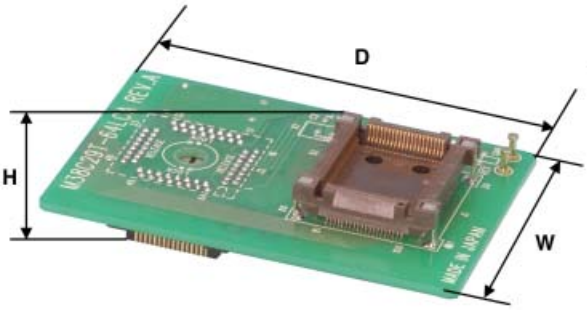
M38C29T-64LCA

Converter from 100-pin RFS Type Emulator MCU to 64-pin 0.8mm-pitch QFP (for 38C1, 38C2, 38K0 and 38K2 Group of 38000 Series)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M38C29T-64LCA is a board for connecting the 100-pin RFS type emulator (M38C13RLFS, M38C29RLFS, M38K09RFS and M38K29RFS) to the foot pattern of 64-pin 0.8mm-pitch QFP (64P6U-A).



Attaching Procedure

(1) Insert the RFS type emulator MCU to the socket on the M38C29T-64LCA.
(2) Mount the LCC socket (option) on the foot pattern on the target system.
(3) Connect this board to the LCC socket with a connector under this board.

Dimensions

70.0(D)×48.7(W)×17.5(H)mm

[Ordering Information] See Appendix H "Ordering Information".

M3T-28DP-WS

Converter for Connecting Emulator Probe to RSS Type Emulator MCU (for PC4701 system)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-28DP-WS is a converter for connecting the emulation pod for PC4701 to the RSS type emulator MCU (M3XXXXRSS, M3XXXXERSS, and M3XXXXRLSS).

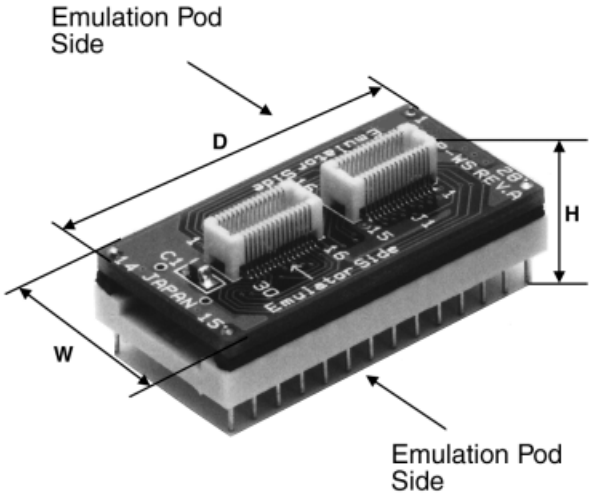
Application

Use the M3T-28DP-WS to connect the 30-pin narrow-pitch probe of emulation pod to the M3T-28DP-WS's connector. Insert it into an RSS type emulator MCU.
Since the M3T-28DP-WS has two connectors mounted on its board, you can connect the emulation pod probe to the target without worrying about the target MCU's up and down directions.
The M3T-28DP-WS is a standard equipment of the emulation pod for PC4701 system.

Dimensions

35.0(D)×18.0(W)×14.0(H)mm

* PC4701 is a generic name representing the PC4701U, PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L. Production of the PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L has been discontinued.



[Ordering Information] See Appendix H "Ordering Information".

M3T-28DP-WT

Converter for Connecting Emulator Probe to RSS Type Emulator MCU (for PC4701 system/option)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-28DP-WT is a converter for connecting the emulation pod for PC4701 to the RSS type emulator MCU (M3XXXXRSS, M3XXXXERSS, and M3XXXXRLSS).

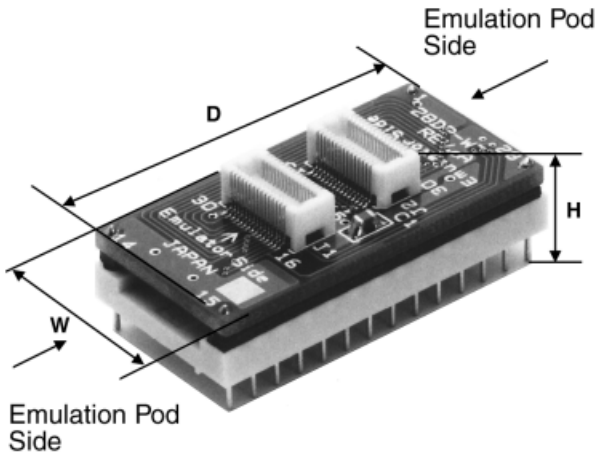
Application

Use the M3T-28DP-WT to connect the 30-pin narrow-pitch probe of emulation pod to the M3T-28DP-WT's connector. Insert it into an RSS type emulator MCU.
Since the M3T-28DP-WT has two connectors mounted on its board, you can connect the emulation pod probe to the target without worrying about the target MCU's up and down directions.
The M3T-28DP-WT is an optional product of the emulation pod for PC4701 system.

Dimensions

35.0(D)×18.0(W)×14.0(H)mm

* PC4701 is a generic name representing the PC4701U, PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L. Production of the PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L has been discontinued.



[Ordering Information] See Appendix H "Ordering Information".

M3T-32LCC-A

Converter for Connecting Emulator Probe to RFS Type Emulator MCU (for PC4701 system/option)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-32LCC-A is a converter for connecting the emulation pod for PC4701 system to the RFS type emulator MCU by screw lock (M3XXXXRFS or M3XXXXRLFS).

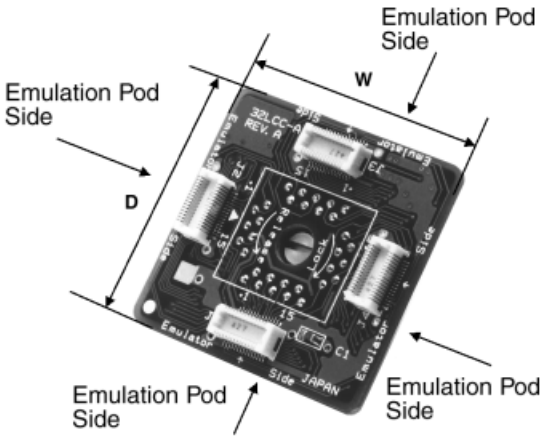
Application

Use the M3T-32LCC-A to connect the 30-pin narrow-pitch probe of emulation pod to the M3T-32LCC-A's connector. Insert it into an RFS type emulator MCU and lock down by screw.
Since the M3T-32LCC-A has four connectors mounted on its board, you can connect the emulation pod probe to the target without worrying about the target MCU's up, down left and right directions.
The M3T-32LCC-A is an optional product of the emulation pod for PC4701 system.

Dimensions

40.0(D)×38.0(W)×18.0(H)mm (without screw)

* PC4701 is a generic name representing the PC4701U, PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L. Production of the PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L has been discontinued.



Note

If the RFS type emulator MCU has no screw lock, use M3T-28DP-WS or M3T-28DP-WT and PCA4933 to connect the probe and emulator MCU.

[Ordering Information] See Appendix H "Ordering Information".

M3T-32LCC-S

Converter for Connecting Emulator Probe to RFS Type Emulator MCU (for PC4701 system)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-32LCC-S is a converter for connecting the emulation pod for PC4701 system to the RFS type emulator MCU by screw lock (M3XXXXRFS or M3XXXXRLFS).

Application

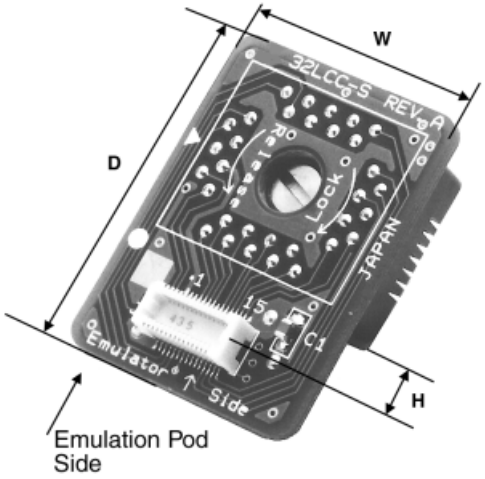
Use the M3T-32LCC-S to connect the 30-pin narrow-pitch probe of emulation pod to the M3T-32LCC-A's connector. Insert it into an RFS type emulator MCU and lock down by screw.

The M3T-32LCC-S is a standard equipment of the emulation pod for PC4701 system.

Dimensions

33.0(D)x25.0(W)x18.0(H)mm (without screw)

* PC4701 is a generic name representing the PC4701U, PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L. Production of the PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L has been discontinued.



Note

If the RFS type emulator MCU has no screw lock, use M3T-28DP-WS or M3T-28DP-WT and PCA4933 to connect the probe and emulator MCU.

[Ordering Information] See Appendix H "Ordering Information".

M3T-42DIP-DMS

Converter for Connecting 42-pin RSS Type Emulator MCU to M3T-DCT42B-450 (or M3T-SSOP42B-450)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter connects a 42-pin 1.778mm-pitch SDIP (42P4B or 42S1B-A) package to the connector provided at the top of the direct dummy IC (M3T-DCT42B-450 or M3T-SSOP42B-450).

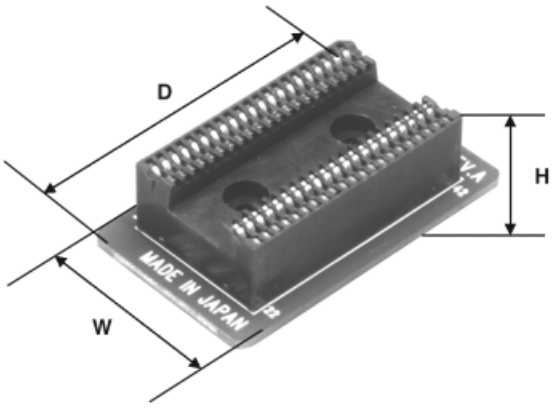
Application

Use this converter when you have M3T-DCT42B-450 or M3T-SSOP42B-450 mounted on the target system and want to connect an RSS-type emulator MCU or EPROM-version MCU (42S1B-A) to the target system.

Dimensions

50.0(D)×30.0(W)×16.5(H)mm

[Ordering Information] See Appendix H "Ordering Information".



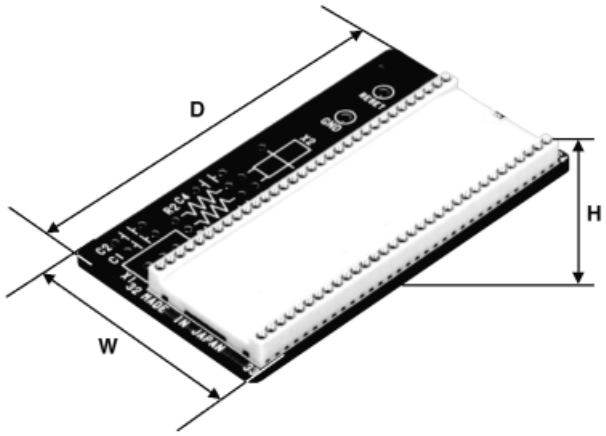
M3T-64DIP-DMS

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Converter for Connecting 64-pin RSS Type Emulator MCU to M3T-DUMMY64

Function

This converter connects a 64-pin 1.778mm-pitch SDIP (64P4B or 64S1B-E) package to the connector provided at the direct dummy IC M3T-DUMMY64.



Application

Use this converter when you have M3T-DUMMY64 mounted on the target system and want to connect an RSS-type emulator MCU or EPROM-version MCU (64S1B-E) to the target system.

Dimensions

62.0(D)×35.0(W)×10.0(H)mm

[Ordering Information] See Appendix H "Ordering Information".

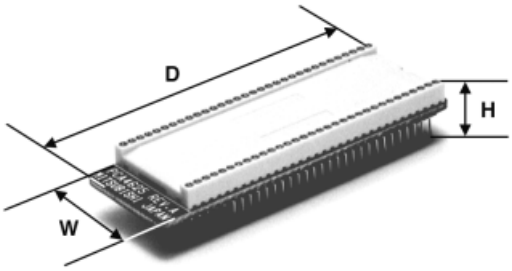
PCA4625

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Converter for Connecting 64-pin RSS Type Emulator MCU to 52-pin 1.778mm-pitch SDIP

Function

The PCA4625 is a board for converting the pin assignment of 64-pin RSS type emulator MCU to that of 52-pin 1.778mm-pitch SDIP.



Application

Use the PCA4625 to insert into the 52-pin SDIP socket on the target and to insert RSS type emulator MCU into the PCA4625 socket.

Dimensions

65.0(D)×22.0(W)×13.5(H)mm

Pin Diameter

ø 0.45mm

[Ordering Information] See Appendix H "Ordering Information".

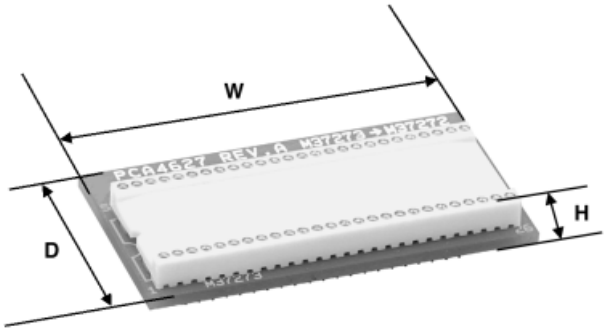
PCA4627

Converter for Connecting 52-pin RSS Type Emulator MCU to 42-pin 1.778mm-pitch SDIP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4627 is a board for converting the pin assignment of 52-pin RSS type emulator MCU (M37273ERSS, etc.) to that of 42-pin 1.778mm-pitch SDIP (M37272XXXXSP, etc.).



Application

Use the PCA4627 to insert the 42-pin SDIP socket on the target and to insert RSS type emulator MCU into the PCA4627 socket.

Dimensions

27.0(D)×50.0(W)×11.0(H)mm

Pin Diameter

ø 0.45mm

[Ordering Information] See Appendix H "Ordering Information".

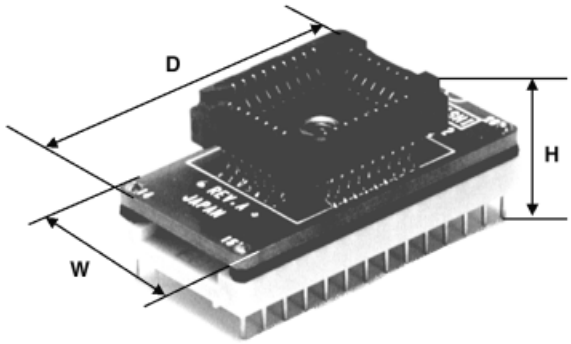
PCA4650G02

Converter for Connecting Emulator Probe to RSS Type Emulator MCU (for PC4600 system)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4650G02 is a converter for connecting the emulation pod (M38000TL-POD or PCA7732G04) for the PCA4600 to the RSS type emulator MCU (M3XXXXRSS, M3XXXXERSS, and M3XXXXRLSS).



Application

Use the PCA4650G02 to connect the probe of emulation pod to the PCA4650G02's connector. Insert it into an RSS type emulator MCU and lock down by screw.
The PCA4650G02 is a standard equipment of the M38000TL-POD emulation pod.

Dimensions

35.6(D)×18.0(W)×17.2(H)mm

[Ordering Information] See Appendix H "Ordering Information".

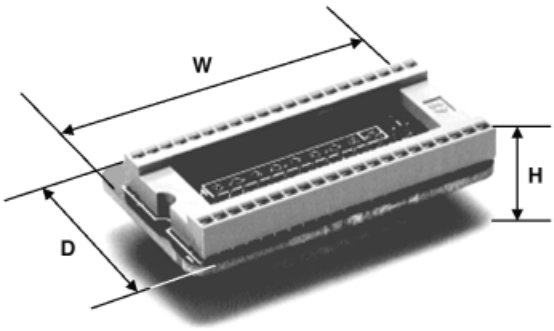
PCA4906

Converter for Connecting 42-pin RSS Emulator MCU to 32-pin 1.778mm-pitch SDIP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4906 is a board for converting the pin assignment of 42-pin RSS type emulator MCU (M37478RSS, etc.) to that of 32-pin 1.778mm-pitch SDIP (M37477Mx-XXXXSP, etc.).



Application

Use the PCA4906 to insert it into the 32-pin SDIP socket on the target and to insert RSS type emulator MCU into the PCA4906 socket.

Dimensions

23.0(D)×40.0(W)×12.5(H)mm

Pin Diameter

ø 0.45mm

[Ordering Information] See Appendix H "Ordering Information".

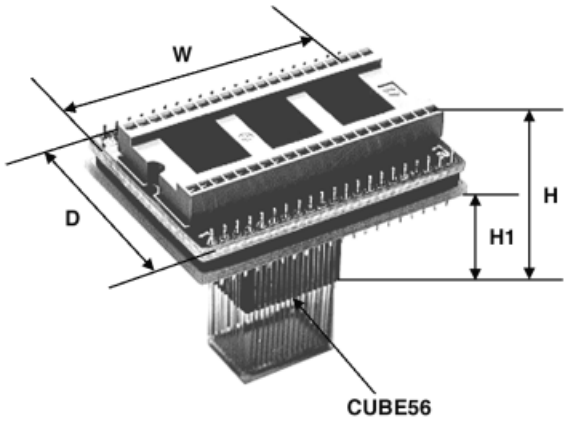
PCA4907

Converter for Connecting 42-pin RSS Type Emulator MCU to 56-pin 0.8mm-pitch QFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4907 is a board for converting the pin assignment of 42-pin RSS type emulator MCU (M37478RSS, etc.) to that of 56-pin 0.8mm-pitch QFP (M3748Mx-XXXXFP, etc.).



Application

Use the PCA4907 to solder the CUBE56 bottom board of the PCA4907 to the target and to insert RSS type emulator MCU into the PCA4907 socket.

Dimensions

29.0(D)×40.0(W)×25.0(H)mm

Height of CUBE56

(H1)=15.0mm

[Ordering Information] See Appendix H "Ordering Information".

PCA4912

Converter for Connecting 42-pin RSS Type Emulator MCU to 32-pin 1.27mm-pitch SOP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4912 is a board for converting the pin assignment of 42-pin RSS type emulator MCU (M37478RSS, etc.) to that of 32-pin 1.27mm-pitch SOP (M37477M8T-XXXFP, etc.).

Application

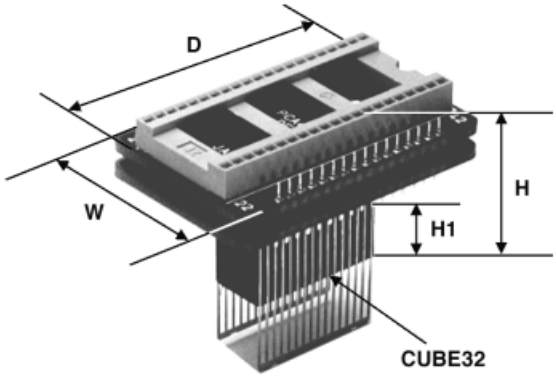
Use the PCA4912 to solder the CUBE32 bottom board of the PCA4912 to the target and to insert RSS type emulator MCU into the PCA4912 socket.

Dimensions

40.0(D)×27.0(W)×25.0(H)mm

Height of CUBE32

(H1)=15.0mm



[Ordering Information] See Appendix H "Ordering Information".

PCA4913

Converter for Connecting 42-pin RSS Type Emulator MCU to 44-pin 0.8mm-pitch QFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4913 is a board for converting the pin assignment of 42-pin RSS type emulator MCU (M37481RSS, etc.) to that of 44-pin 0.8mm-pitch QFP (44P6N-A: M37481Mx-XXXFP, etc.).

Application

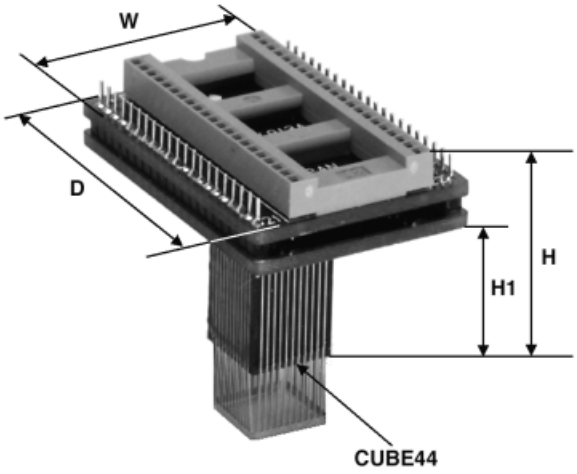
Use the PCA4913 to solder the CUBE44 bottom board of the PCA4913 to the target and to insert RSS type emulator MCU into the PCA4913 socket.

Dimensions

40.0(D)×27.0(W)×30.0(H)mm

Height of CUBE44

(H1)=20.0mm



[Ordering Information] See Appendix H "Ordering Information".

PCA4933

Converter for Connecting Emulator Probe to RFS Type Emulator MCU (for PC4701, compact emulator, and PC4600 systems)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4933 is used to connect the emulation pod M38000TL2-FPD for the PC4701 system or compact emulator system M38000T2-CPE or emulation pod M38000TL-POD for the PC4600 system to the RFS type emulator MCU without screw lock.

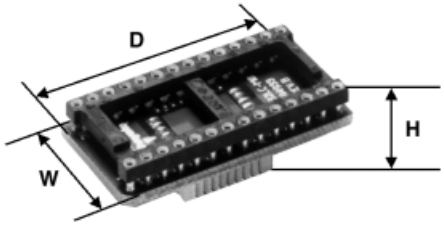
Also, the PCA4933 is a converter for connecting the emulation pod M38000TL-POD for the PC4600 system to the RFS type emulator MCU (M3XXXXRFS or M3XXXXRLFS).

Application

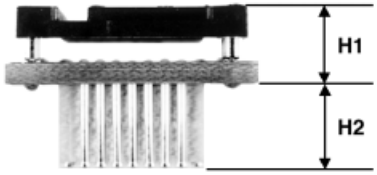
Use the PCA4933 to connect the probe of emulation pod or other boards to the PCA4933's connector. Insert it into an RFS type emulator MCU.

Dimensions

36.5(D)×19.0(W)×12.5(H)mm
(H1)=6.0mm (H2)=6.5mm



《 Side view 》



* PC4701 is a generic name representing the PC4701U, PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L. Production of the PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L has been discontinued.

[Ordering Information] See Appendix H "Ordering Information".

M34513T-PTCA

Converter for Connecting 32-pin 1.778mm-pitch SDIP (for 4500 Series)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

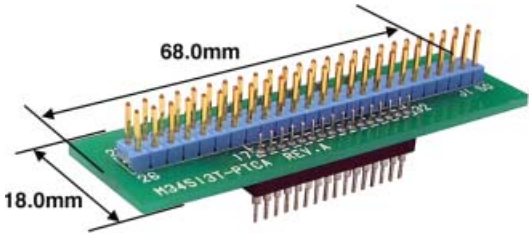
Function

This converter connects 50-conductor normal-pitch cable to 32-pin 1.778mm-pitch SDIP(32P6U-A). The 50-conductor normal-pitch cable is included emulators of 4500series.

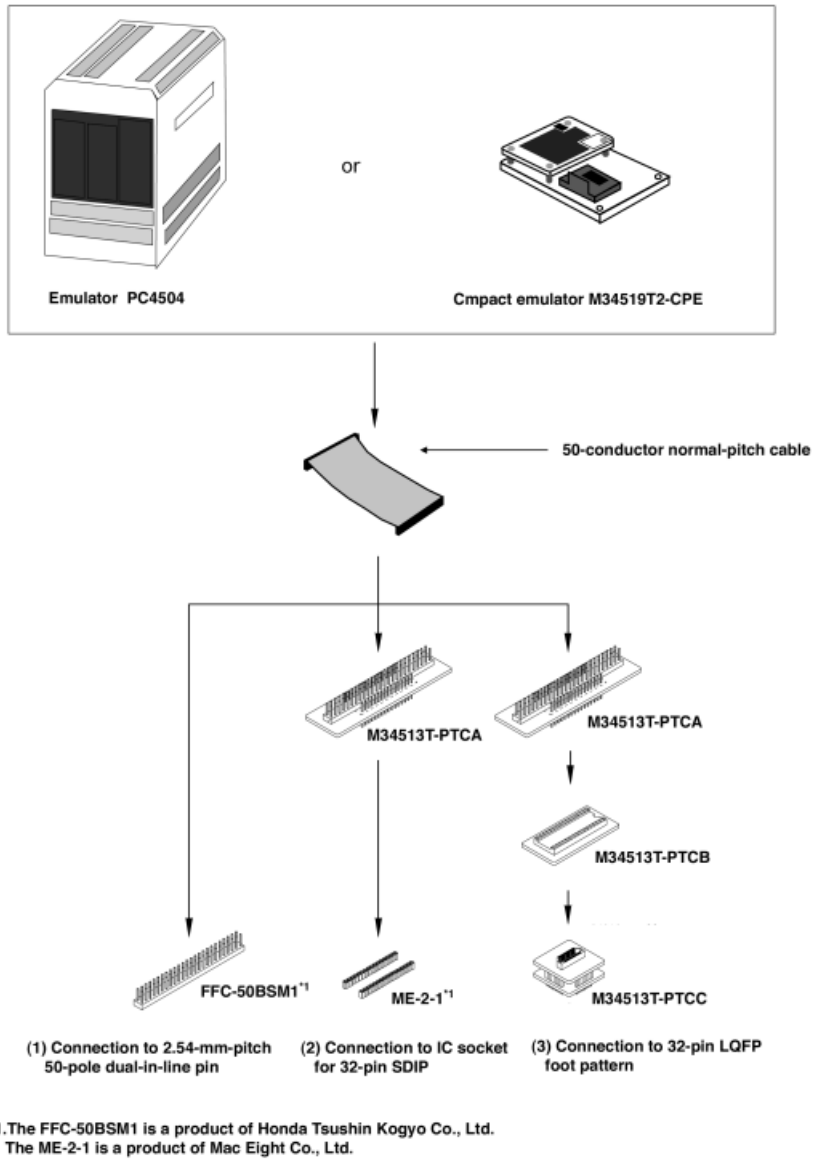
Package Components

• M34513T-PTCA

External View and Dimensions



Connecting Image



*1.The FFC-50BSM1 is a product of Honda Tsushin Kogyo Co., Ltd.
The ME-2-1 is a product of Mac Eight Co., Ltd.

[Ordering Information] See Appendix H "Ordering Information".

M34513T-PTCB

Converter for Connecting 32-pin 1.778mm-pitch SDIP to 40-core narrow-pitch (for 4500 Series)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

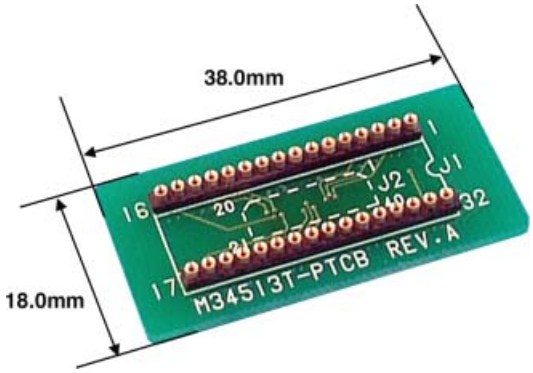
Function

This converter connects 32-pin 1.778mm-pitch SDIP to 40-core narrow-pitch. This is used with M34513T-PTCC.

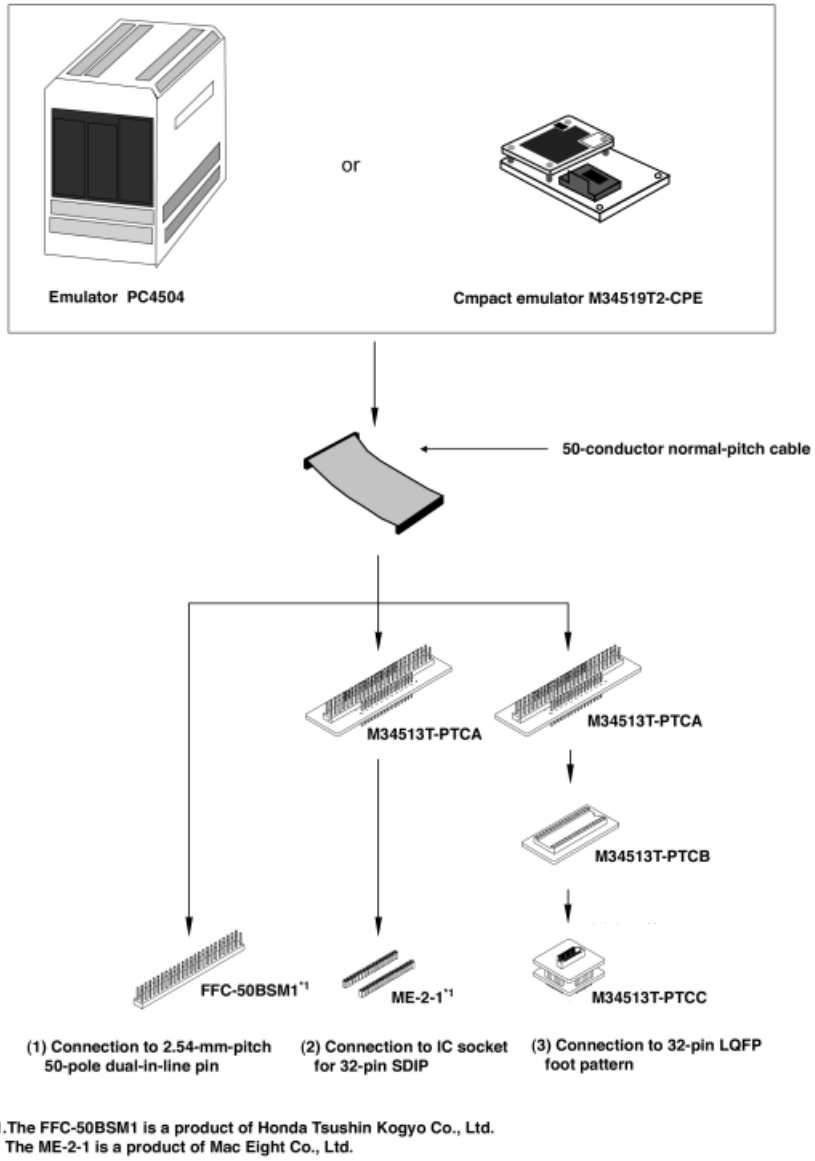
Package Components

• M34513T-PTCB

External View and Dimensions



Connecting Image



*1.The FFC-50BSM1 is a product of Honda Tsushin Kogyo Co., Ltd.
The ME-2-1 is a product of Mac Eight Co., Ltd.

[Ordering Information] See Appendix H "Ordering Information".

M34513T-PTCC

Converter for Connecting 40-core narrow-pitch to 32-pin 0.8mm-pitch LQFP (for 4500 Series)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter connects the 40-core narrow-pitch to t32-pin 0.8mm-pitch LQFP. This is used with M34513T-PTCB.

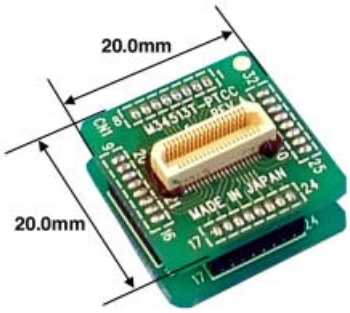
Package Components

- M34513T-PTCC
- TQSOCKET032SAW
- TQPACK032SA

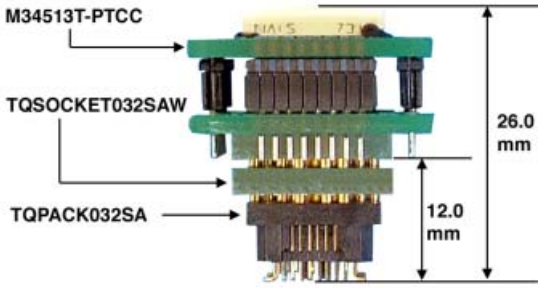
Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."

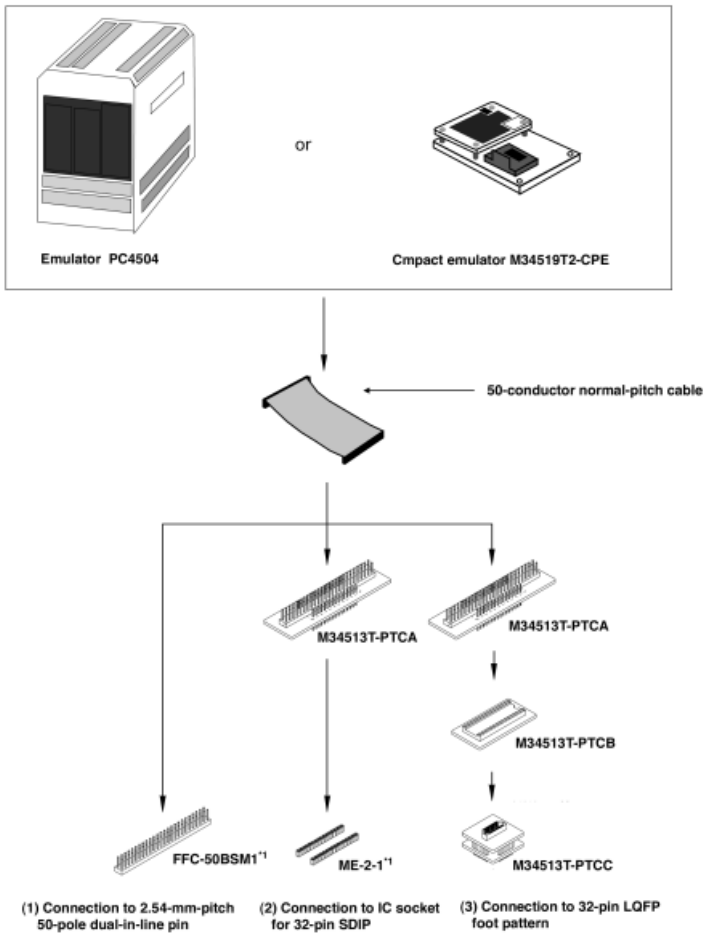
External View and Dimensions



《Side View》



Connecting Image



*1.The FFC-50BSM1 is a product of Honda Tsushin Kogyo Co., Ltd.
The ME-2-1 is a product of Mac Eight Co., Ltd.

[Ordering Information] See Appendix H "Ordering Information".

M34553T-PTCA

50-pin Narrow-Pitch Connector Converter Board for M34552T2-CPE
(for 4553, 4556 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

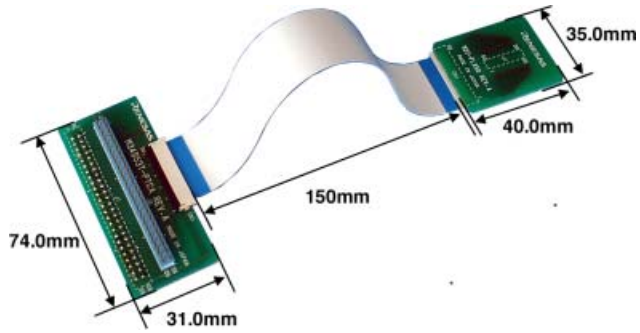
Function

This converter connects 50-conductor normal-pitch pin on compact emulator M34552T2-CPE for 4552, 4553 and 4556 group to 50-pin Narrow-pitch Connector .

Package Components

- M34553T-PTCA
- User's manual

External View and Dimensions



[Ordering Information] See Appendix H "Ordering Information".

M34553T-PTCB

Converter Board for 48-pin 0.5-mm-pitch LQFP for M34552T2-CPE (for 4553 Group)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

M34553T-PTCB is a converter board for 4553 Group for connectingthe the tip of M34553T-PTCA (50-pin Narrow-Pitch Connector Converter Board for 4553 and 4556 Groups) for M34552T2-CPE to the footpattern for 48-pin 0.5-mm-pitch QFP (48P6Q-A).

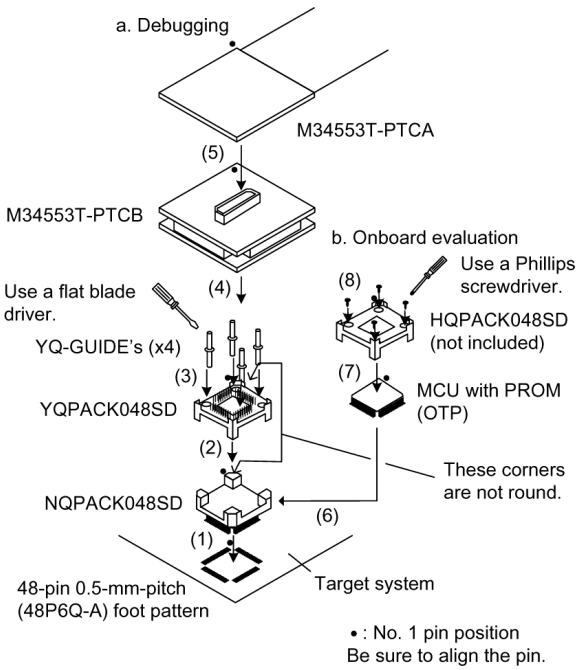
Attaching Procedure

When debugging

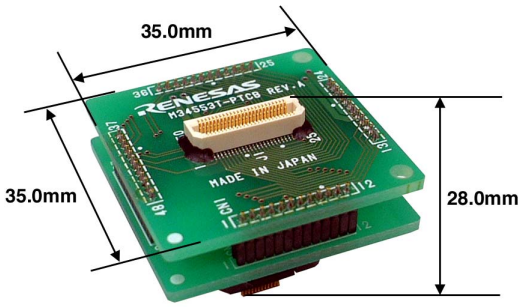
(1) Mount NQPACK048SD on the foot pattern on the target system.
(2) On the top of (1), mount YQPACK048SD.
(3) Screw down the YQPACK048SD with YQ-GUIDE's.
(4) Connect the YQPACK048SD and M34553T-PTCB.
(5) Connect the M34553T-PTCA (50-pin Narrow-Pitch Connector Converter Board for 4553 and 4556 Groups) for M34552T2-CPE to the upper narrow-pitch connector of M34553T-PTCB for use.

During board-mounted evaluation

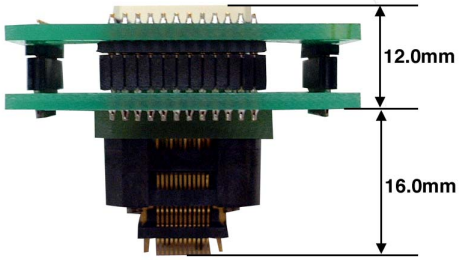
Mount the HQPACK048SD (separately available) in that order on the NQPACK048SD on the target system.



External View and Dimensions



《Side View》

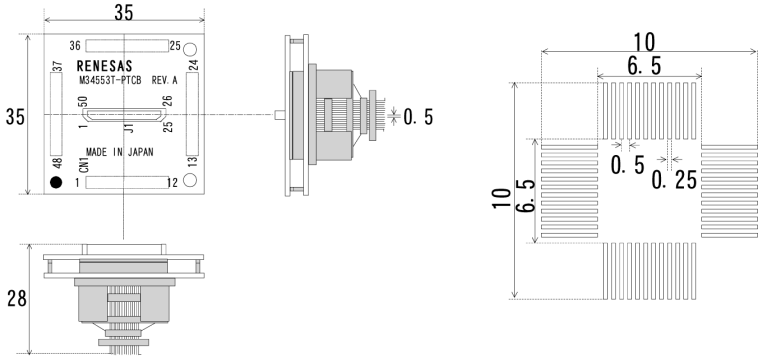


Package Components

- M34553T-PTCB converter
- YQPACK048SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK048SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

80P6-80P6S

Converter for Connecting 80-pin 0.8mm-pitch LCC to 80-pin 0.65mm-pitch QFP

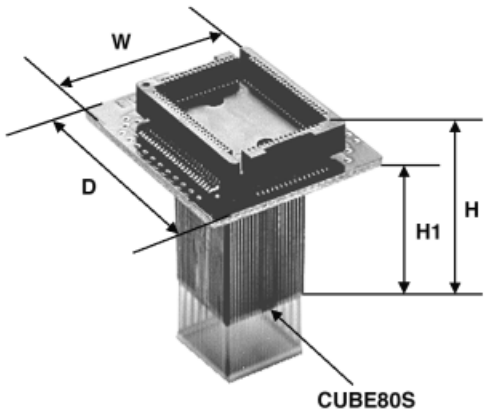
REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The 80P6-80P6S is a board for converting 80-pin 0.8mm-pitch LCC (80D0) to 80-pin 0.65mm-pitch QFP (80P6S-A).

Application

Use the 80P6-80P6S to solder the CUBE80S bottom board of the 80P6-80P6S to the 80-pin 0.65mm-pitch QFP foot pattern of the target and to insert RFS type emulator MCU or 7700 Family emulator probe, etc. into the 80P6-80P6S socket. The 80D0 package's pin No. 1 corresponds to the 80P6S-A package's pin No. 79.



Dimensions

34.0(D)×30.0(W)×33.0(H)mm

Height of CUBE80S

(H1)=25.0mm

[Ordering Information] See Appendix H "Ordering Information".

M3T-100LCC-QSD

Converter for Connecting 100-pin 0.65mm-pitch LCC to 100-pin 0.5mm-pitch LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-100LCC-QSD is a board for converting 100-pin 0.65mm-pitch LCC (100D0) to 100-pin 0.5mm-pitch LQFP (100P6Q-A to formerly 100P6D-A).

Application

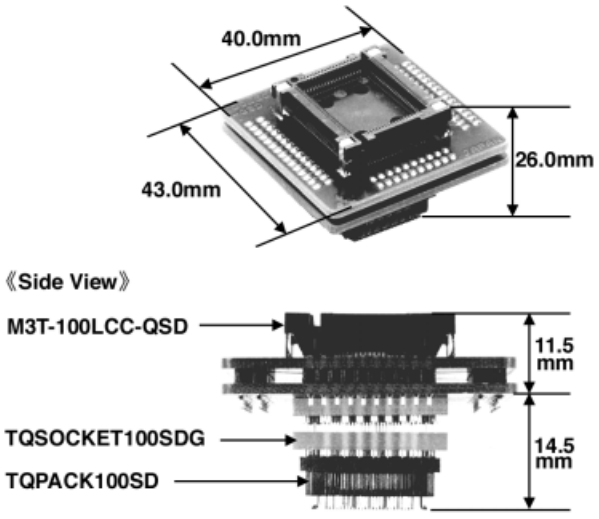
Use the M3T-100LCC-QSD to solder the TQPACK100SD bottom board of the M3T-100LCC-QSD to the 100-pin 0.5mm-pitch QFP (100P6Q-A) foot pattern of the target and to insert RFS type emulator MCU into the M3T-100LCC-QSD socket. The 100D0 package's pin No. 3 corresponds to the 100P6Q-A package's pin No. 1.

Package Components

- M3T-100LCC-QSD
- TQSOCKET100SDG (made by Tokyo Eletech Co., Ltd.)
- TQPACK100SD (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

External View and Dimensions



Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."
[Ordering Information] See Appendix H "Ordering Information".

M3T-64LCC-QSD

Converter for Connecting 64-pin 0.8mm-pitch LCC to 64-pin 0.5mm-pitch LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-64LCC-QSD is a board for converting 64-pin 0.8mm-pitch LCC (64D0) to 64-pin 0.5mm-pitch LQFP (64P6Q-A to formerly 64P6D-A).

Application

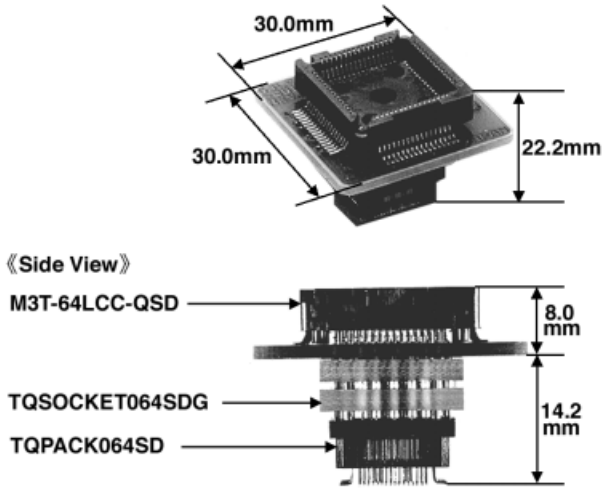
Use the M3T-64LCC-QSD to solder the TQPACK064SD bottom board of the M3T-64LCC-QSD to the 64-pin 0.5mm-pitch LQFP (64P6Q-A) foot pattern of the target and to insert the M38007T-PRB or an EPROM-version MCU into the M3T-64LCC-QSD socket. The pin No. 1 of 64D0 package corresponds to the pin No. 1 of 64P6Q-A package.

Package Components

- M3T-64LCC-QSD
- TQSOCKET064SDG (made by Tokyo Eletech Co., Ltd.)
- TQPACK064SD (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

External View and Dimensions



Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."
[Ordering Information] See Appendix H "Ordering Information".

M3T-80LCC-QSD

Converter for Connecting 80-pin 0.8mm-pitch LCC to 80-pin 0.5mm-pitch QFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-80LCC-QSD is a board for converting 80-pin 0.8mm-pitch LCC (80D0) to 80-pin 0.5mm-pitch QFP (80P6Q-A to formerly 80P6D-A).

Application

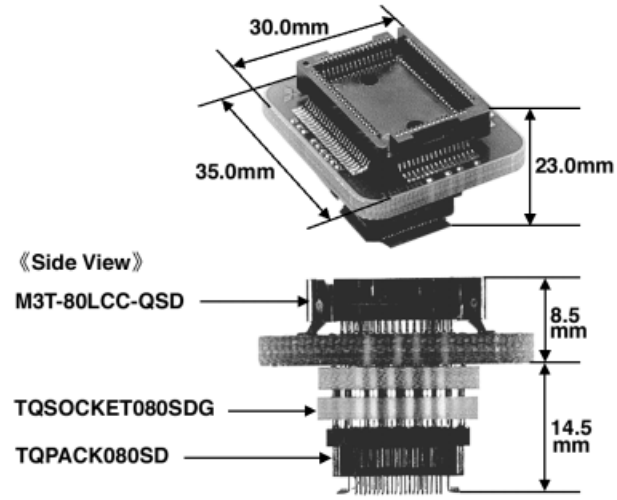
Use the M3T-80LCC-QSD to solder the TQPACK080SD bottom board of the M3T-80LCC-QSD to the 80-pin 0.5mm-pitch QFP (80P6Q-A) foot pattern of the target and to insert RFS type emulator MCU, etc. into the M3T-80LCC-QSD socket. The pin No. 3 of 80D0 package corresponds to the pin No. 1 of 80P6Q-A package.

Package Components

- M3T-80LCC-QSD
- TQSOCKET080SDG (made by Tokyo Eletech Co., Ltd.)
- TQPACK080SD (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

External View and Dimensions



Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."
[Ordering Information] See Appendix H "Ordering Information".

M3T-F160-100NSD

Converter for Connecting 160-core Flexible Board FLX160 to 100-pin 0.5mm-pitch LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-F160-100NSD is a converter for connecting the FLX160 160-core flexible board to a foot pattern of a 100-pin 0.5mm-pitch LQFP (100P6Q-A). This converter can be used during debugging and board-mounted evaluation in common.

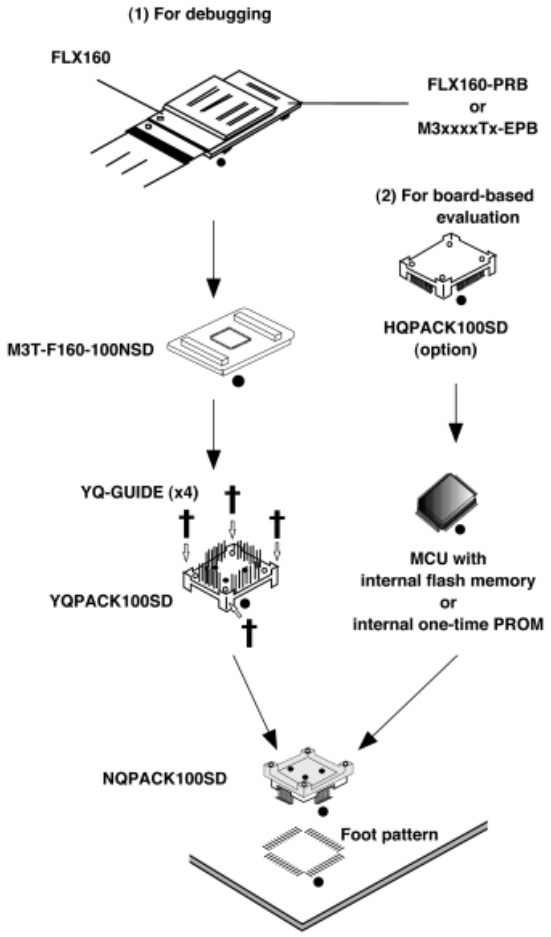
Attaching Procedure

When debugging

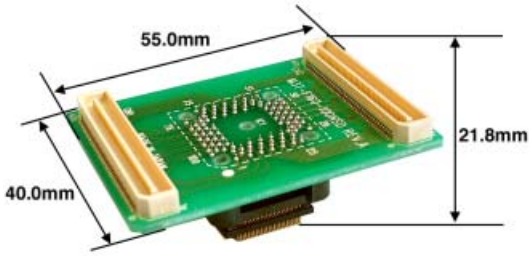
(1) Mount the NQPACK100SD on the foot pattern of the target system.
(2) Attach the YQPACK100SD on top of (1).
(3) Screw down the YQPACK100SD with YQ-GUIDE's.
(4) Connect the probe of top of emulator to the upper connector of the M3T-F160-100NSD.
(5) Connect the YQPACK100SD and M3T-F160-100NSD together for use.

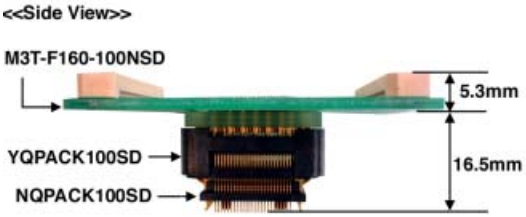
During board-mounted evaluation

On top of NQPACK100SD that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK100SD (option) in that order.



External View and Dimensions



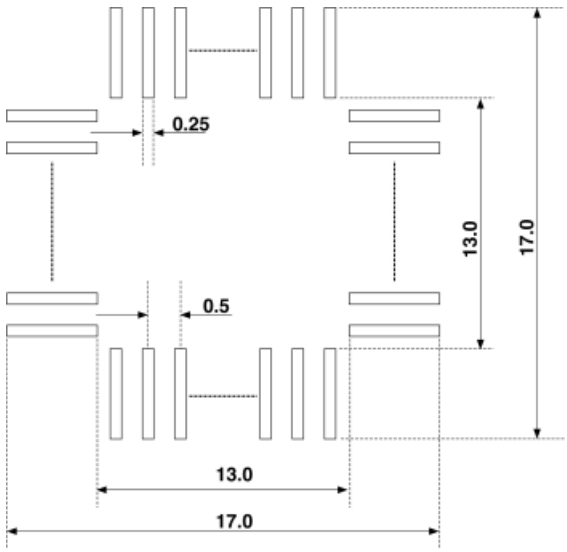


Package Components

- M3T-F160-100NSD converter
- YQPACK100SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK100SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M3T-F160-100NSE

Converter for Connecting 160-core Flexible Board FLX160 to 100-pin 0.4mm-pitch TQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-F160-100NSE is a converter for connecting the FLX160 160-core flexible board to a foot pattern of a 100-pin 0.4mm-pitch TQFP (100PFB-A). This converter can be used during debugging and board-mounted evaluation in common.

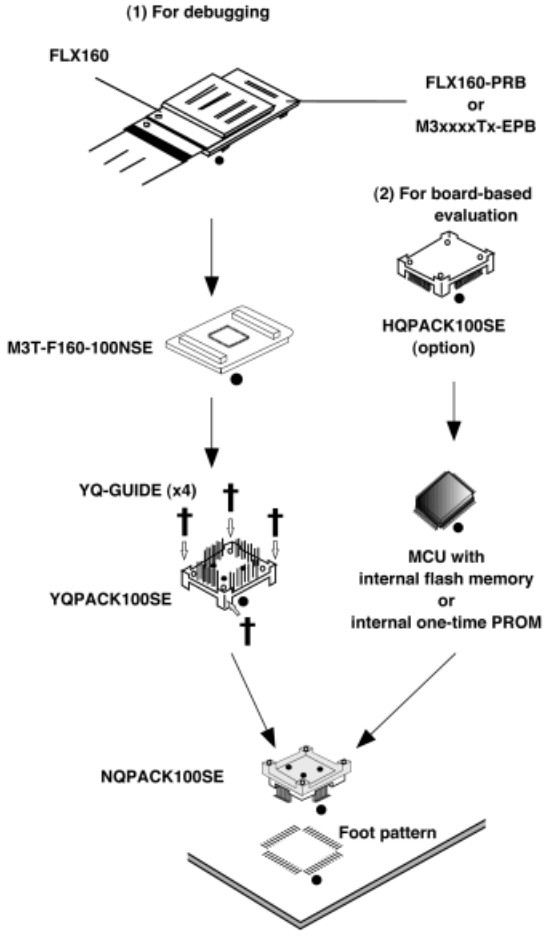
Attaching Procedure

When debugging

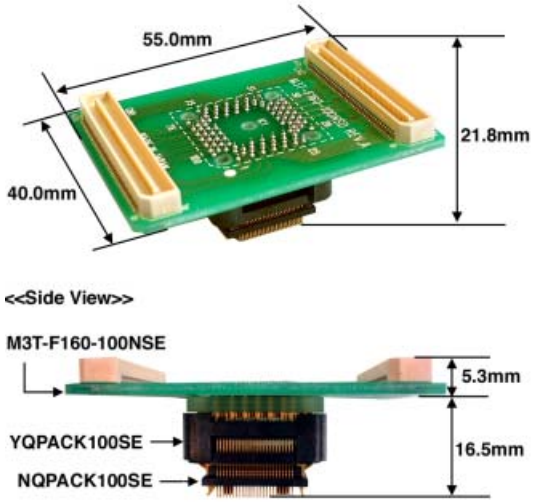
(1) Mount the NQPACK100SE on the foot pattern of the target system.
(2) Attach the YQPACK100SE on top of (1).
(3) Screw down the YQPACK100SE with YQ-GUIDE's.
(4) Connect the probe of top of emulator to the upper connector of the M3T-F160-100NSE.
(5) Connect the YQPACK100SE and M3T-F160-100NSE together for use.

During board-mounted evaluation

On top of NQPACK100SE that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK100SE (option) in that order.



External View and Dimensions

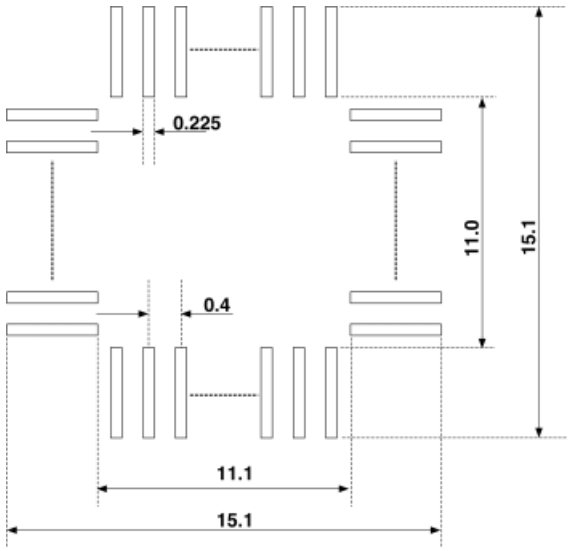


Package Components

- M3T-F160-100NSE converter
- YQPACK100SE (made by Tokyo Eletech Co., Ltd.)
- NQPACK100SE (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M3T-F160-128NRD

Converter for Connecting 160-core Flexible Board FLX160 to 128-pin 0.5mm-pitch LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-F160-128NRD is a converter for connecting the FLX160 160-core flexible board to a foot pattern of a 128-pin 0.5mm-pitch LQFP (128P6Q-A). This converter can be used during debugging and board-mounted evaluation in common.

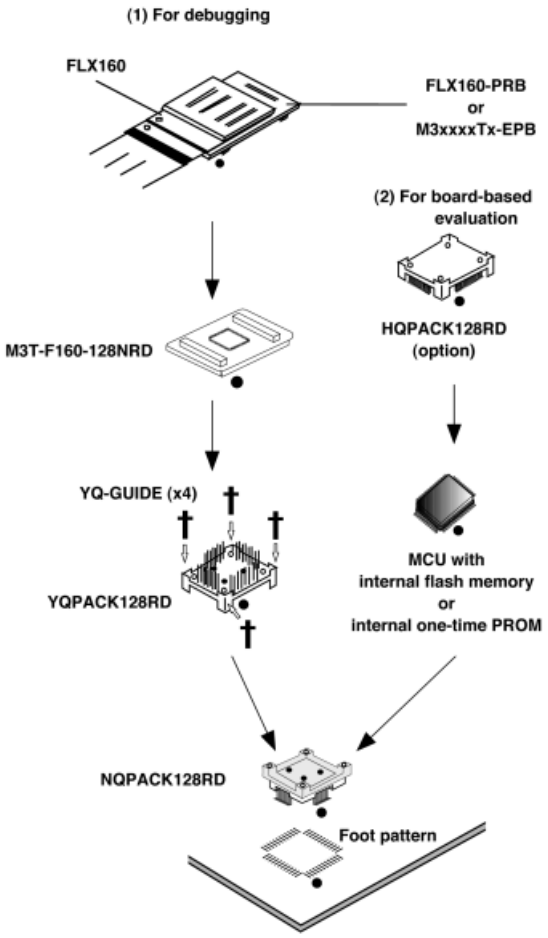
Attaching Procedure

When debugging

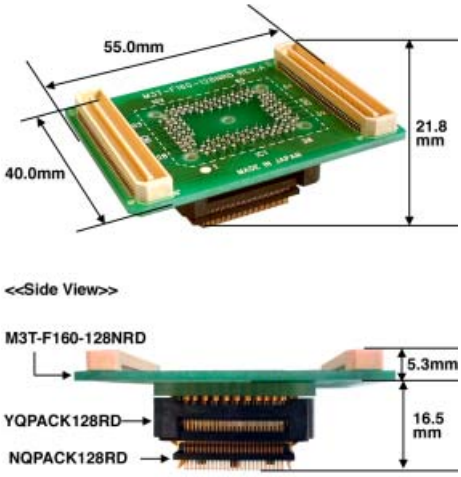
(1) Mount the NQPACK128RD on the foot pattern of the target system.
(2) Attach the YQPACK128RD on top of (1).
(3) Screw down the YQPACK128RD with YQ-GUIDE's.
(4) Connect the probe of top of emulator to the upper connector of the M3T-F160-128NRD.
(5) Connect the YQPACK128RD and M3T-F160-128NRD together for use.

During board-mounted evaluation

On top of NQPACK128RD that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK128RD (option) in that order.



External View and Dimensions

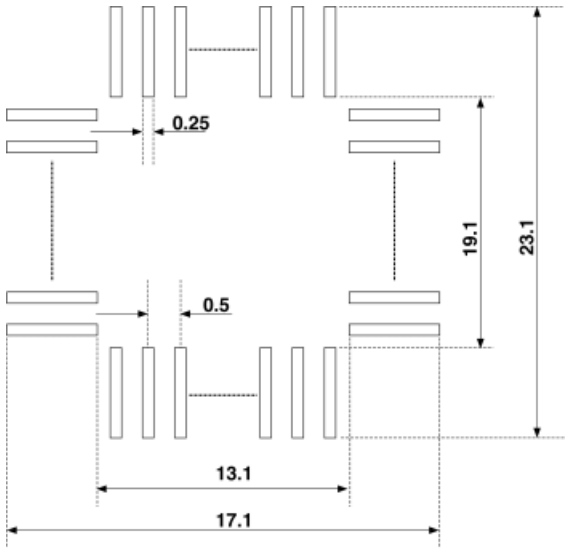


Package Components

- M3T-F160-128NRD converter
- YQPACK128RD (made by Tokyo Eletech Co., Ltd.)
- NQPACK128RD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M3T-F160-EXTC

Extension Cable for FLX160

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

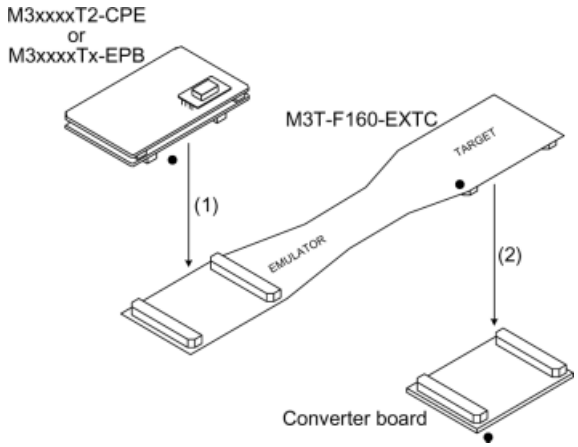
The M3T-F160-EXTC is an extension cable used between the compact emulator or emulation probe and the converter board. This cable extends the distance between them up to about 200mm. The connection is one to one.

Package Components

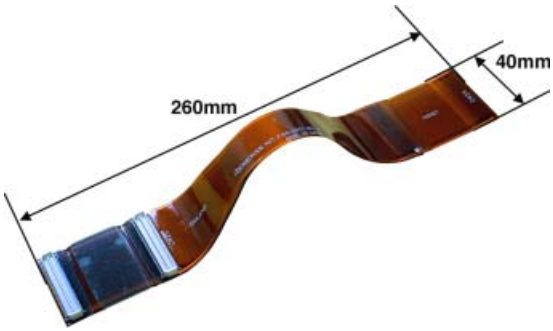
- M3T-F160-EXTC
- User's manual

Attaching Procedure

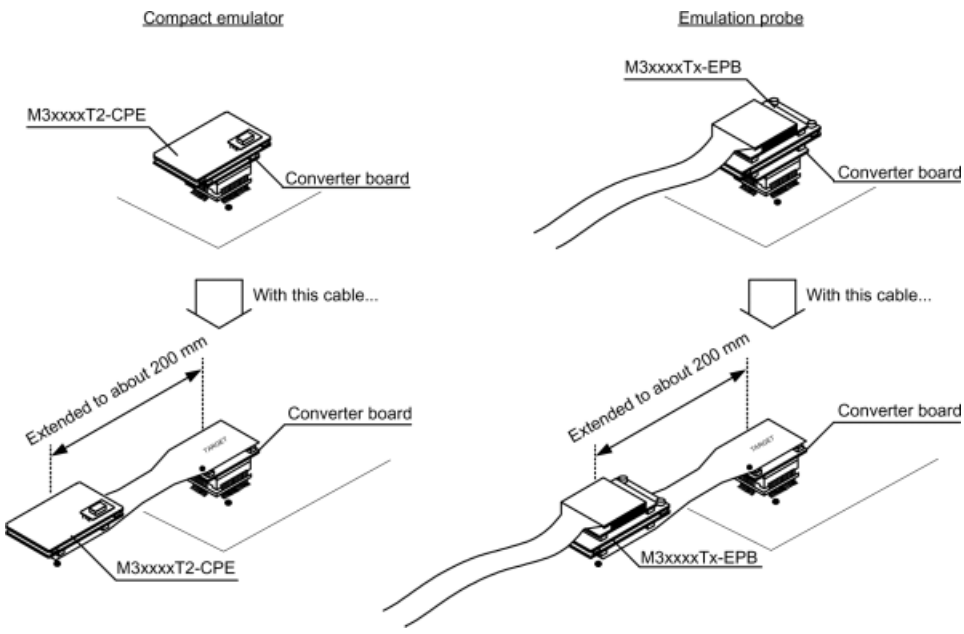
(1) Attach the compact emulator or emulation probe to the EMULATOR side of the M3T-F160-EXTC.
(2) Attach the converter board to the TARGET side of the M3T-F160-EXTC.



External View and Dimensions



Usage



[Ordering Information] See Appendix H "Ordering Information".

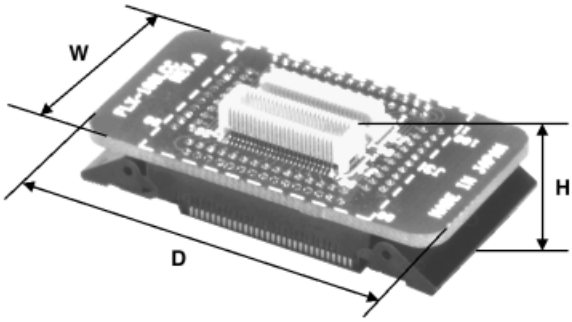
M3T-FLX-100LCC

Converter for Connecting 100-core Flexible Board FLX100 to 100-pin 0.65mm-pitch LCC

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter connects the 100-core flexible board (FLX100) and the socket for 100-pin 0.65mm-pitch LCCs (100D0).



Application

Use the converter when you have a 100-pin 0.65mm-pitch LCC socket mounted on the target system.

Dimensions

42.0(D)×22.0(W)×13.0(H)mm

Foot Pattern Reference Dimensions

See Appendix C "Reference Dimensional Drawings for Common 100-pin 0.65mm-pitch QFP Foot Pattern".

[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-100NRB

Converter for Connecting 100-core Flexible Board FLX100 to 100-pin 0.65mm-pitch QFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-100NRB is a converter for connecting the FLX100 100-core flexible board to a foot pattern of a 100-pin 0.65mm-pitch QFP (100P6S-A). This converter can be used during debugging and board-mounted evaluation in common.

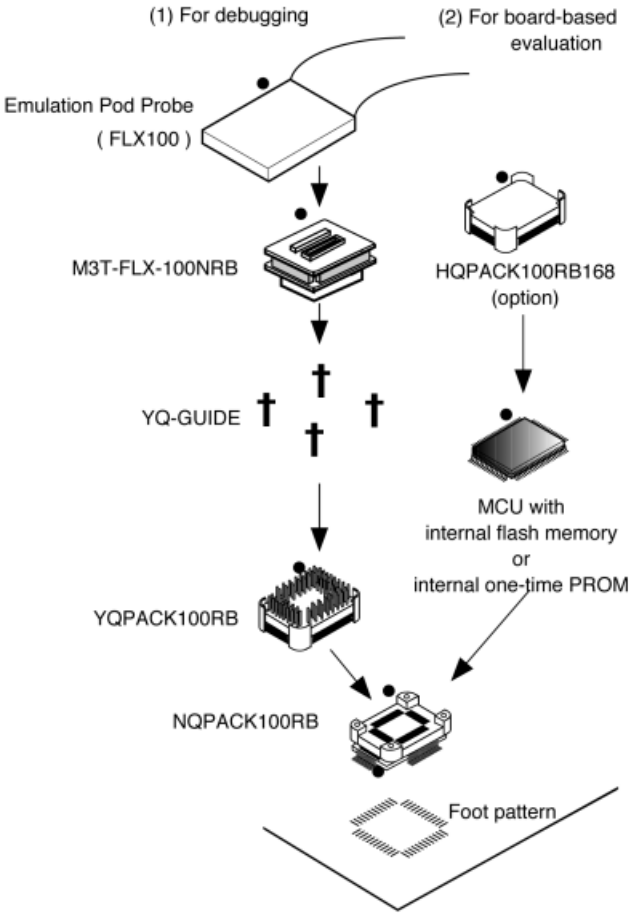
Attaching Procedure

When debugging

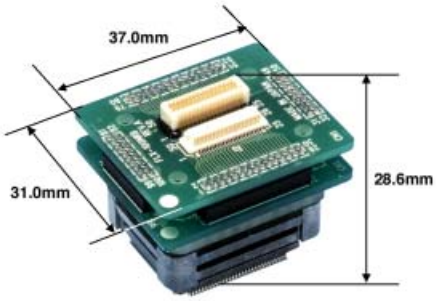
(1) Mount the NQPACK100RB.
(2) Attach the YQPACK100RB on the NQPACK100RB.
(3) Secure the four corners of the YQPACK100RB by the included YQ-GUIDE's.
(4) Attach the M3T-FLX-100NRB to the YQPACK100RB.
(5) Attach the probe of the emulation pod to the M3T-FLX-100NRB.

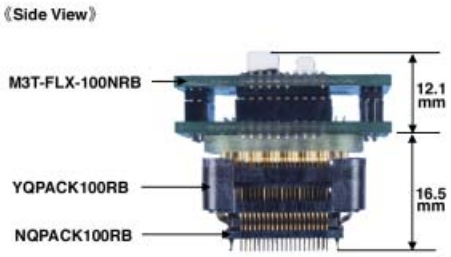
During board-mounted evaluation

On top of NQPACK100RB that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK100RB168 (option) in that order.



External View and Dimensions





Package Components

- M3T-FLX-100NRB converter
- YQPACK100RB (made by Tokyo Eletech Co., Ltd.)
- NQPACK100RB (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."

[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-100NSD

Converter for Connecting 100-core Flexible Board FLX100 to 100-pin 0.5mm-pitch LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-100NSD is a converter for connecting the FLX100 100-core flexible board to a foot pattern of a 100-pin 0.5mm-pitch LQFP (100P6Q-A=100P6D-A). This converter can be used during debugging and board-mounted evaluation in common.

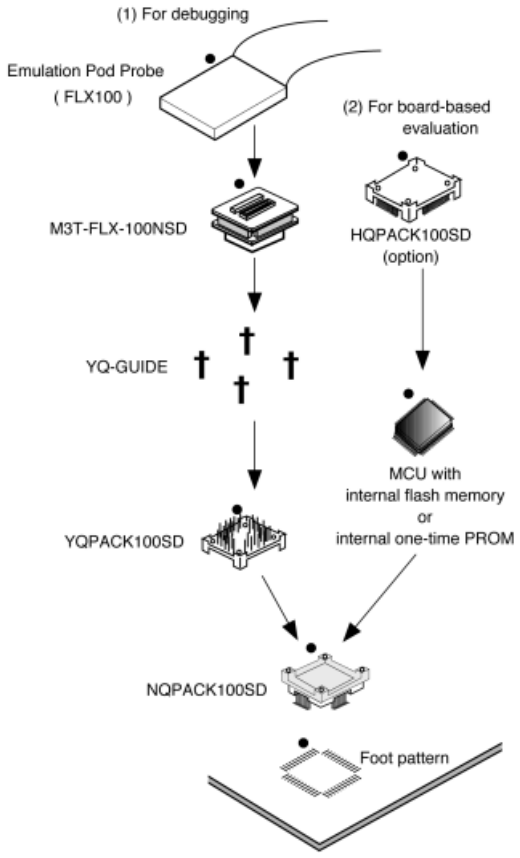
Attaching Procedure

When debugging

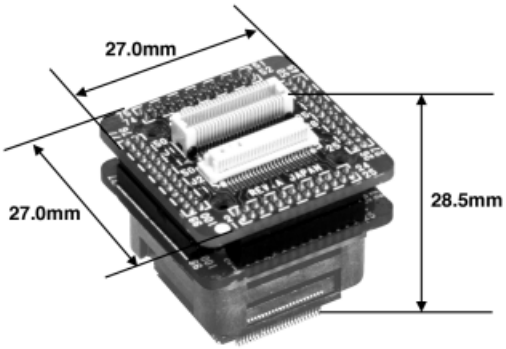
(1) Mount the NQPACK100SD.
(2) Attach the YQPACK100SD on the NQPACK100SD.
(3) Secure the four corners of the YQPACK100SD by the included YQ-GUIDE's.
(4) Attach the M3T-FLX-100NSD to the YQPACK100SD.
(5) Attach the probe of the emulation pod to the M3T-FLX-100NSD.

During board-mounted evaluation

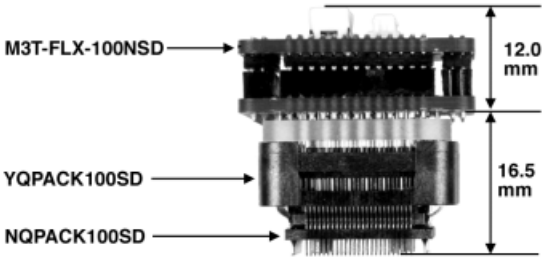
On top of NQPACK100SD that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK100SD (option) in that order.



External View and Dimensions



《Side View》



Package Components

- M3T-FLX-100NSD converter
- YQPACK100SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK100SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."

[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-100NSE

Converter for Connecting 100-core Flexible Board FLX100 to 100-pin 0.4mm-pitch TQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-100NSE is a converter for connecting the FLX100 100-core flexible board to a foot pattern of a 100-pin 0.4mm-pitch TQFP (100PFB-A). This converter can be used during debugging and board-mounted evaluation in common.

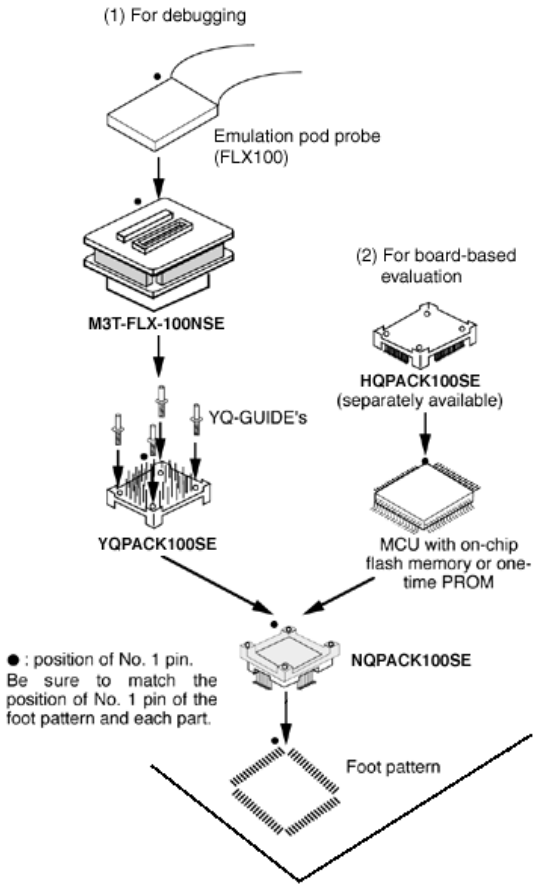
Attaching Procedure

When debugging

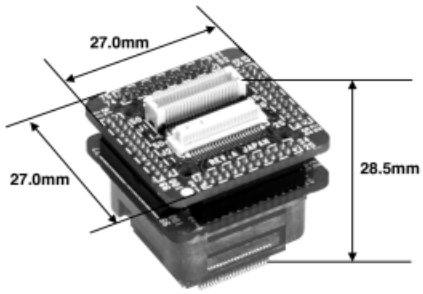
(1) Mount the NQPACK100SE on the foot pattern of the target system.
(2) Attach the YQPACK100SE on top of (1).
(3) Screw down the YQPACK100SE with YQ-GUIDE's.
(4) Attach the M3T-FLX-100NSE to the YQPACK100SE.
(5) Attach the probe of the emulation pod to the M3T-FLX-100NSE.

During board-mounted evaluation

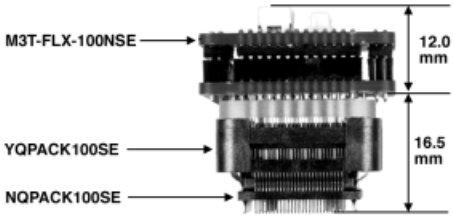
On top of NQPACK100SE that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK100SE (option) in that order.



External View and Dimensions



《Side View》

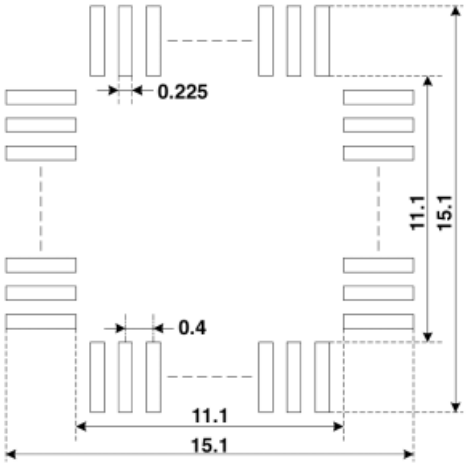


Package Components

- M3T-FLX-100NSE converter
- YQPACK100SE (made by Tokyo Eletech Co., Ltd.)
- NQPACK100SE (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-120NSE

Converter for Connecting 160-core Flexible Board FLX160 to 120-pin 0.4mm-pitch LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-120NSE is a converter for connecting the FLX160 160-core flexible board to a foot pattern of a 120-pin 0.4mm-pitch LQFP (120P6R-A). This converter can be used during debugging and board-mounted evaluation in common.

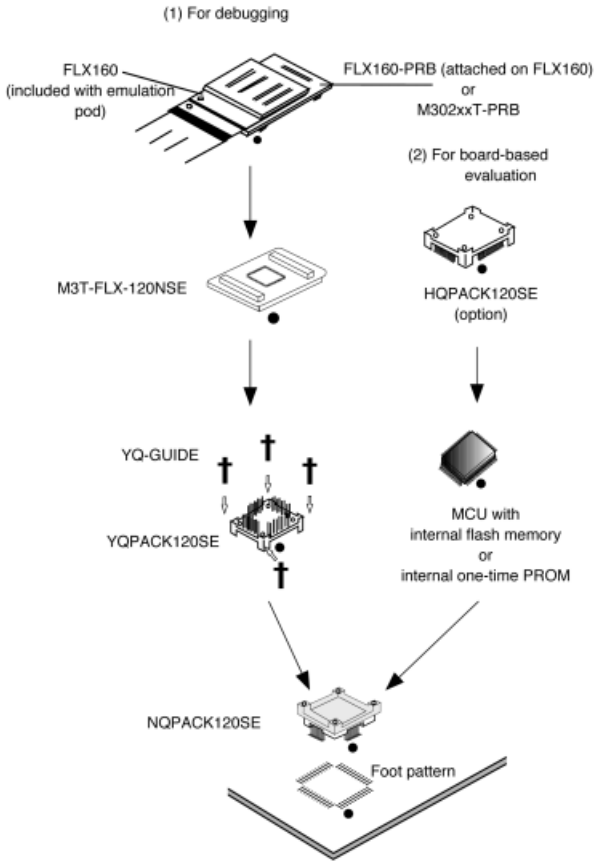
Attaching Procedure

When debugging

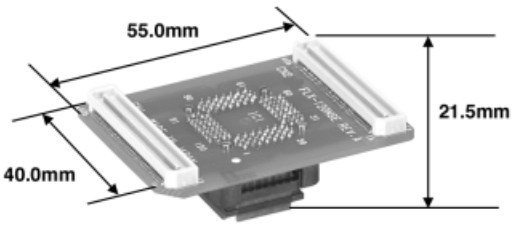
(1) Mount the NQPACK120SE on the foot pattern of the target system.
(2) Attach the HQPACK120SE on top of (1).
(3) Screw down the YQPACK120SE with YQ-GUIDE's.
(4) Connect the probe of the emulation pod to the upper connector of the M3T-FLX-120NSE.
(5) Connect the YQPACK120SE and M3T-FLX-120NSE together for use.

During board-mounted evaluation

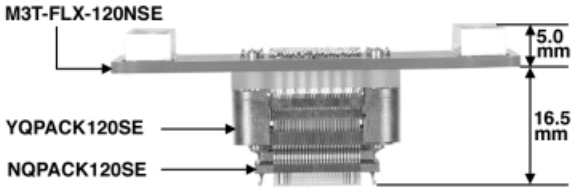
On top of NQPACK120SE that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK120SE (option) in that order.



External View and Dimensions



《Side View》

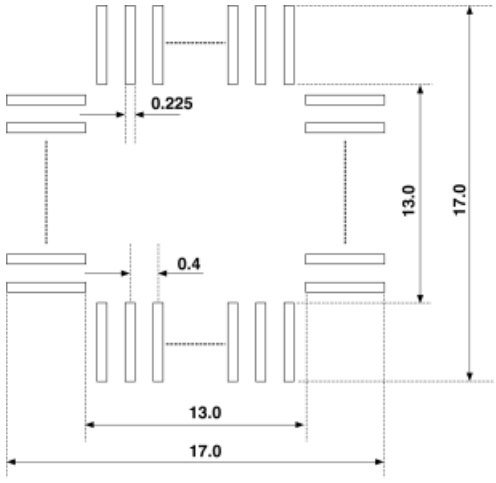


Package Components

- M3T-FLX-120NSE converter
- YQPACK120SE (made by Tokyo Eletech Co., Ltd.)
- NQPACK120SE (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-144NSD

Converter for Connecting 160-core Flexible Board FLX160 to 144-pin 0.5mm-pitch LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-144NSD is a converter for connecting the FLX160 160-core flexible board to a foot pattern of a 144-pin 0.5mm-pitch LQFP (144P6Q-A). This converter can be used during debugging and board-mounted evaluation in common.

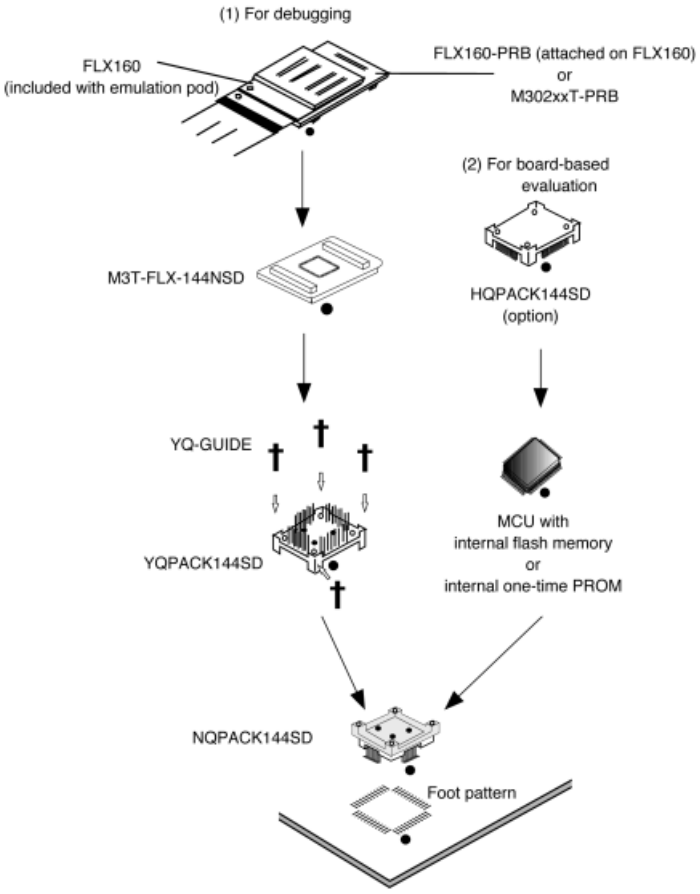
Attaching Procedure

When debugging

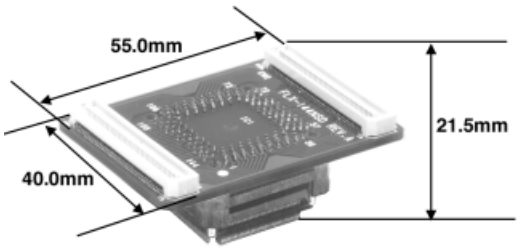
(1) Mount the NQPACK144SD on the foot pattern of the target system.
(2) Attach the YQPACK144SD on top of (1).
(3) Screw down the YQPACK144SD with YQ-GUIDE's.
(4) Connect the probe of the emulation pod to the upper connector of the M3T-FLX-144NSD.
(5) Connect the YQPACK144SD and M3T-FLX-144NSD together for use.

During board-mounted evaluation

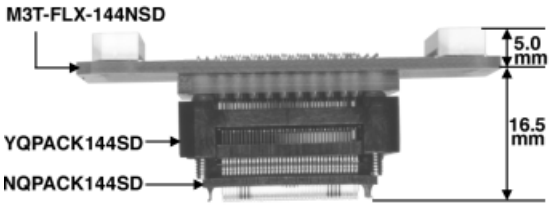
On top of NQPACK144SD that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK144SD (option) in that order.



External View and Dimensions



《Side View》

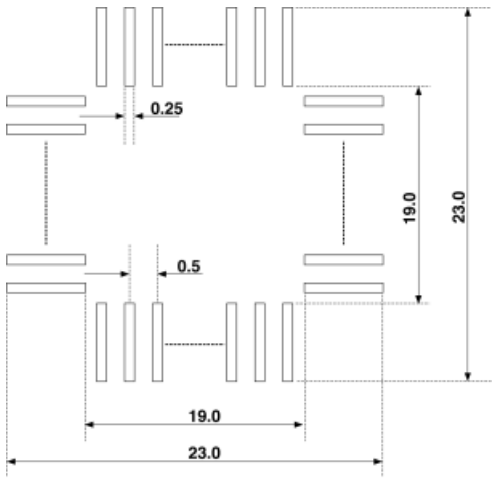


Package Components

- M3T-FLX-144NSD converter
- YQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK144SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-144NSE

Converter for Connecting 160-core Flexible Board FLX160 to 144-pin 0.5mm-pitch TQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-144NSE is a converter for connecting the FLX160 160-core flexible board to a foot pattern of a 144-pin 0.4mm-pitch TQFP (144PFB-A).This converter can be used during debugging and board-mounted evaluation in common.

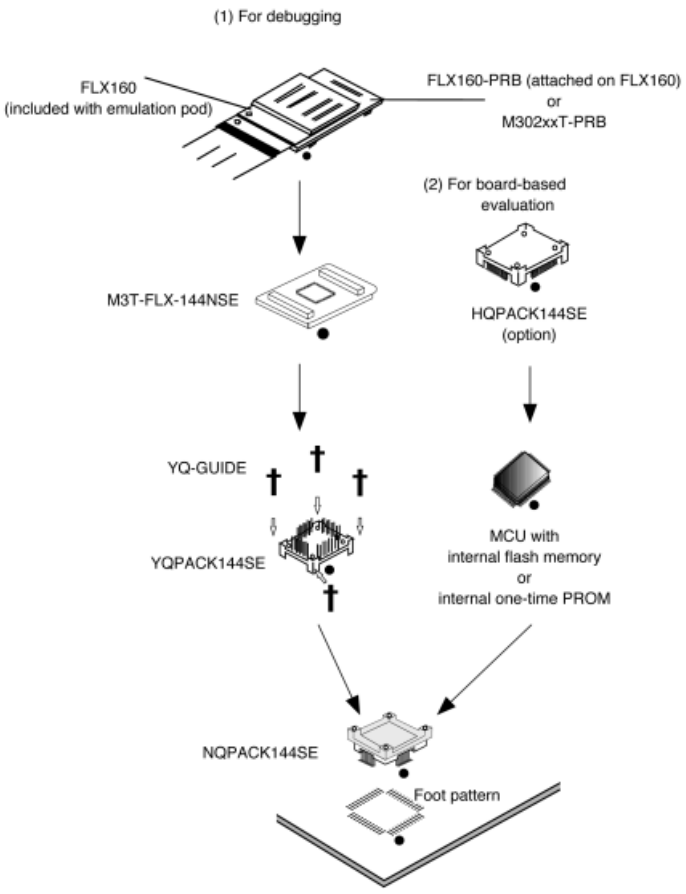
Attaching Procedure

When debugging

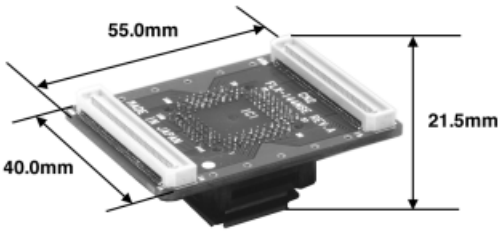
(1) Mount the NQPACK144SE on the foot pattern of the target system.
(2) Attach the HQPACK144SE on top of (1).
(3) Screw down the YQPACK144SE with YQ-GUIDE's.
(4) Connect the probe of the emulation pod to the upper connector of the M3T-FLX-144NSE.
(5) Connect the YQPACK144SE and M3T-FLX-144NSE together for use.

During board-mounted evaluation

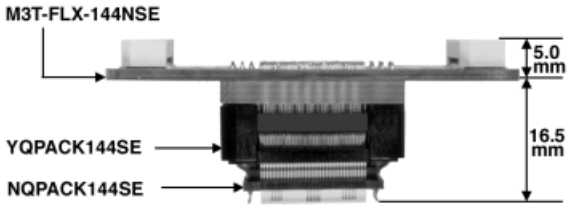
On top of NQPACK144SE that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK144SE (option) in that order.



External View and Dimensions



《Side View》

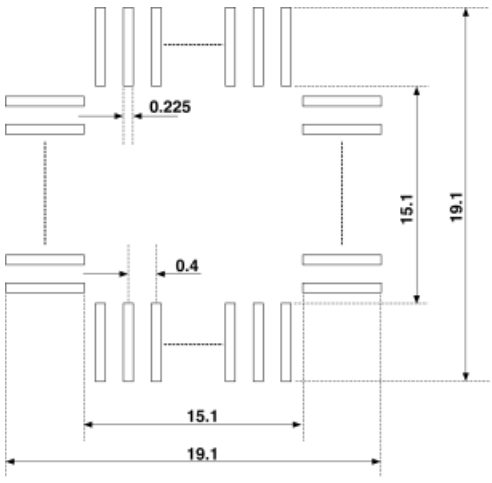


Package Components

- M3T-FLX-144NSE converter
- YQPACK144SE (made by Tokyo Eletech Co., Ltd.)
- NQPACK144SE (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Phillips screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

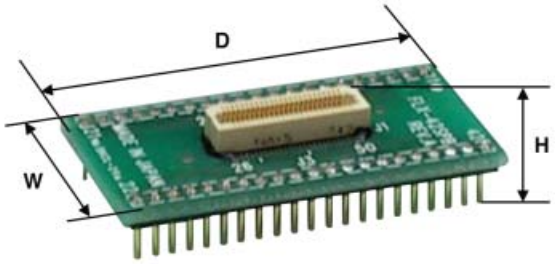
M3T-FLX-42SPB

Converter for Connecting 42-pin 1.778mm-pitch SDIP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-42SPB is a board for converting the probe of the emulation pod (or pod probe M3xxxxT-PRB) to 42-pin 1.778mm-pitch SDIP (42P4B).



Application

Insert this board to 42-pin SDIP socket on the target system. Then connect the probe of the emulation pod (or pod probe M3xxxxT-PRB) to the upper connector on this board for use.

Dimensions

39.46(D)×19.14(W)×8.8(H)mm

Pin Diameter

ø 0.45mm

[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-64NSA

Converter for Connecting 100-core Flexible Board FLX100 to 64-pin 0.8mm-pitch QFP/LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-64NSA is a converter for connecting the FLX100 100-core flexible board to a foot pattern of a 64-pin 0.8mm-pitch QFP(64P6N-A) or LQFP(64P6U-A). This converter can be used during debugging and board-mounted evaluation in common.

Attaching Procedure

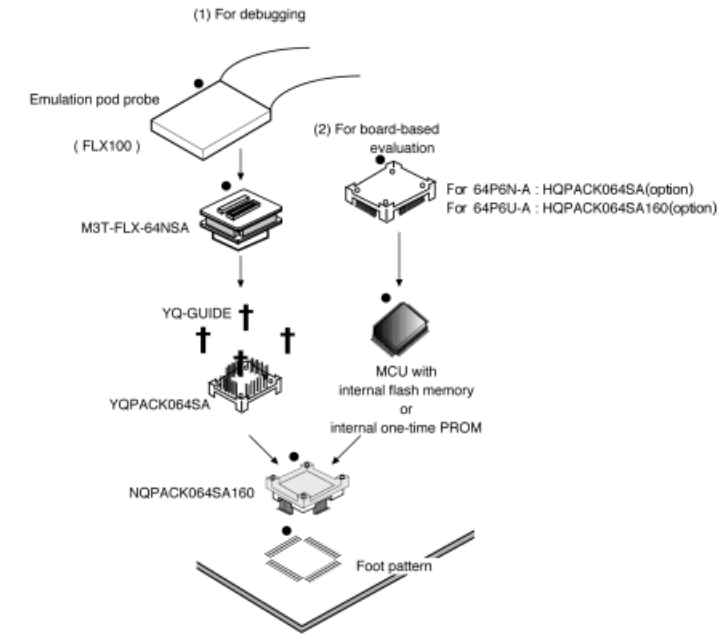
When debugging

(1) Mount the NQPACK064SA160.
(2) Attach the YQPACK064SA on the NQPACK064SA160.
(3) Secure the four corners of theYQPACK064SA by the included YQ-GUIDE's.
(4) Attach the M3T-FLX-64NSA to the YQPACK064SA.
(5) Attach the probe of the emulation pod to the M3T-FLX-64NSA.

During board-mounted evaluation

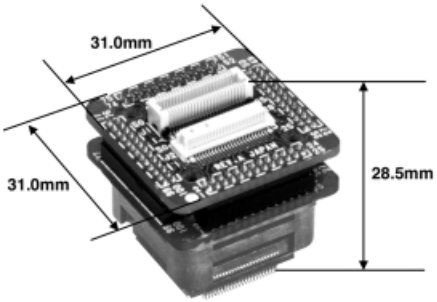
On top of NQPACK064SA160 that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK064SA (option)*1 or HQPACK064SA160 (option)*1 in that order.

*1. For MCU package 64P6N-A : HQPACK064SA
For MCU package 64P6U-A : HQPACK064SA160

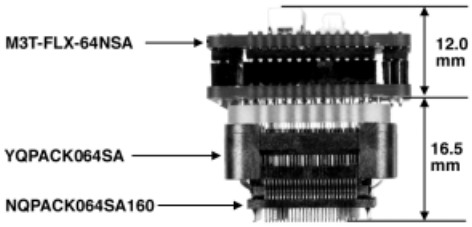


●: position of No. 1 pin. Be sure to match the position of No. 1 pin of the foot pattern and each part.

External View and Dimensions



《Side View》

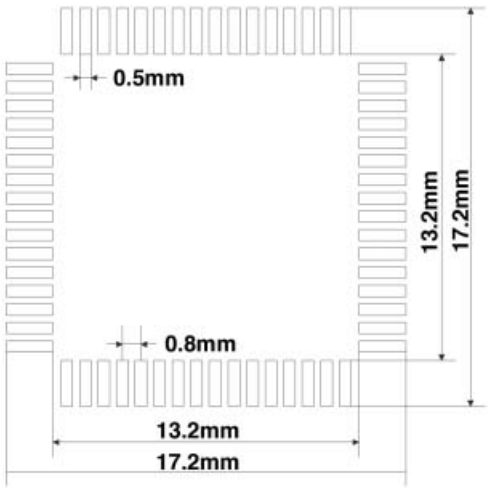


Package Components

- M3T-FLX-64NSA converter
- YQPACK064SA (made by Tokyo Eletech Co., Ltd.)
- NQPACK064SA160 (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Recommended Foot Pattern (Unit: mm)



[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-80LCC

Converter for Connecting 100-core Flexible Board FLX100 to 80-pin 0.8mm-pitch LCC

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

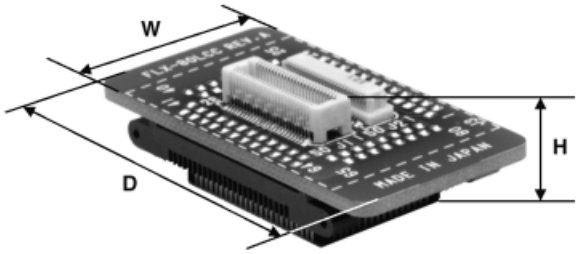
This converter connects the 100-core flexible board (FLX100) and the socket for 80-pin 0.8mm-pitch LCCs (80D0).

Application

Use this converter when you have an 80-pin 0.8mm-pitch LCC socket mounted on the target system.

Dimensions

42.0(D)×22.0(W)×12.8(H)mm



M3T-FLX-80NRA

Converter for Connecting 100-core Flexible Board FLX100 to 80-pin 0.8mm-pitch QFP/LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-80NRA is a converter for connecting the FLX100 100-core flexible board to a foot pattern of an 80-pin 0.8mm-pitch QFP (80P6N-A) or LQFP (80P6U-A). This converter can be used during debugging and board-mounted evaluation in common.

Attaching Procedure

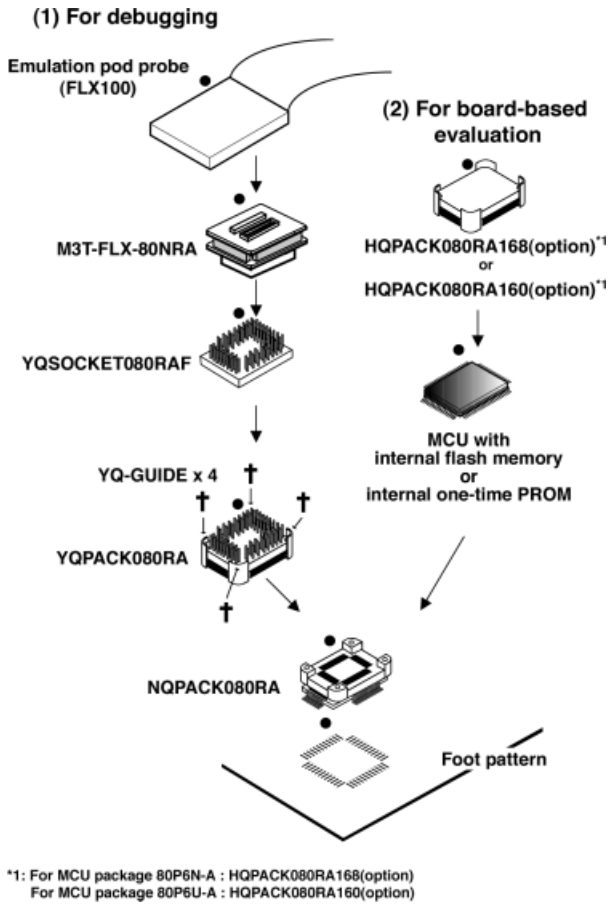
When debugging

(1) Mount NQPACK080RA on the foot pattern on the target system.
(2) On the top of (1), mount YQPACK080RA, YQSOCKET080RAF and M3T-FLX-80NRA in that order.
(3) Then connect the probe of the emulation pod to the connector provided at the top of the M3T-FLX-80NRA.

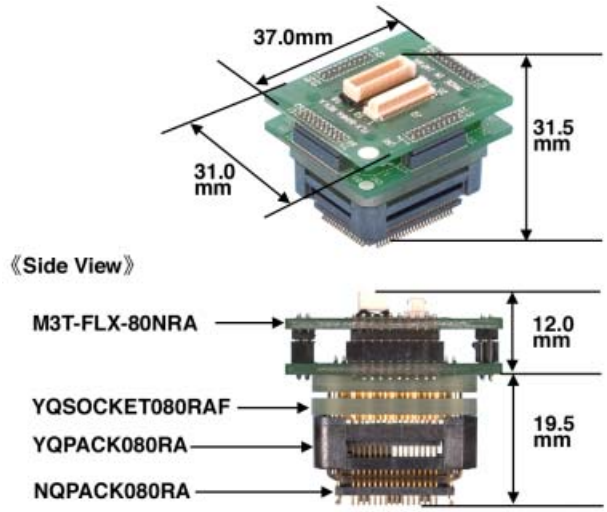
During board-mounted evaluation

On top of NQPACK080RA that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK080RA168 (option)*1 or HQPACK080RA160 (option)*1 in that order.

- *1 : For MCU package 80P6N-A : Use HQPACK080RA168 (option).
- *1 : For MCU package 80P6U-A : Use HQPACK080RA160 (option).



External View and Dimensions



Package Components

- M3T-FLX-80NRA converter
- YQSOCKET080RAF (made by Tokyo Eletech Co., Ltd.)
- YQPACK080RA (made by Tokyo Eletech Co., Ltd.)
- NQPACK080RA (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- Screw driver (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."

[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-80NSD

Converter for Connecting 100-core Flexible Board FLX100 to 80-pin 0.5mm-pitch LQFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M3T-FLX-80NSD is a converter for connecting the FLX100 100-core flexible board to a foot pattern of an 80-pin 0.5mm-pitch LQFP (80P6Q-A). This converter can be used during debugging and board-mounted evaluation in common.

Attaching Procedure

When debugging

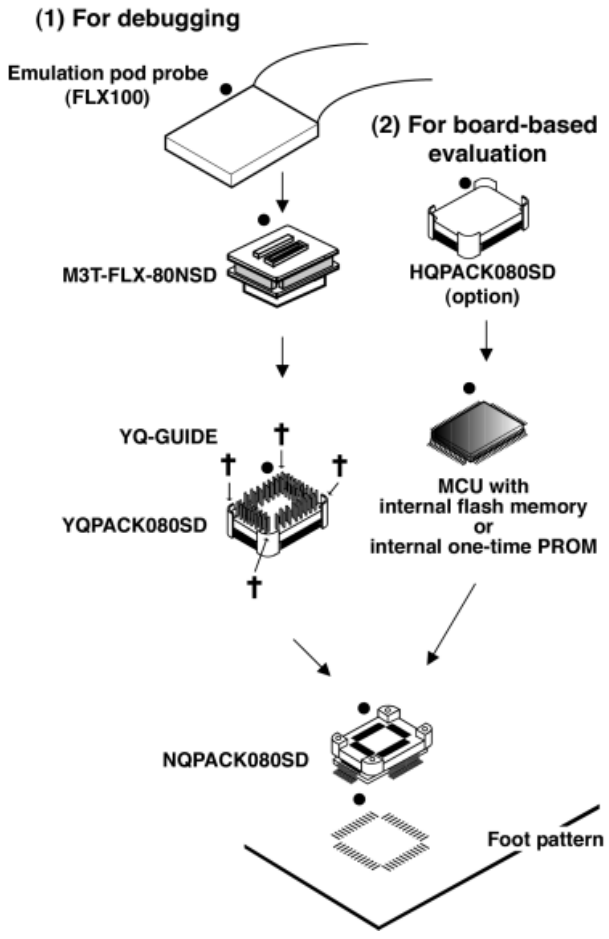
(1) Mount NQPACK080SD on the foot pattern on the target system.

(2) On the top of (1), mount YQPACK080SD, M3T-FLX-80NSD in that order.

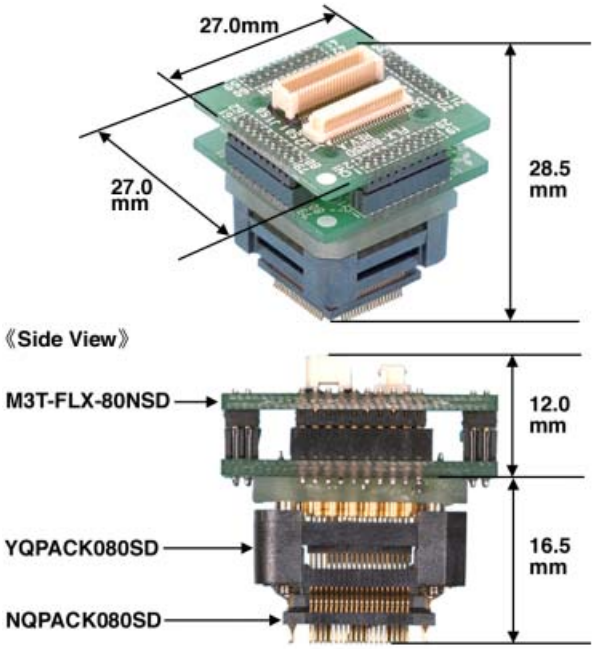
(3) Then connect the probe of the emulation pod to the connector provided at the top of the M3T-FLX-80NSD.

During board-mounted evaluation

On top of NQPACK080SD that is mounted on the target system, attach the MCU with on-chip flash memory or one-time PROM and the HQPACK080SD (option) in that order.



External View and Dimensions



Package Components

- M3T-FLX-80NSD converter
- YQPACK080SD (made by Tokyo Eletech Co., Ltd.)
- NQPACK080SD (made by Tokyo Eletech Co., Ltd.)
- YQ-GUIDE (× 4)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."

[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX-80QSB

Converter for Connecting 100-core Flexible Board FLX100 to 80-pin 0.65mm-pitch QFP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter connects the 100-core flexible board (FLX100) to the foot pattern for 80-pin 0.85mm-pitch QFPs (80P6S-A).

Application

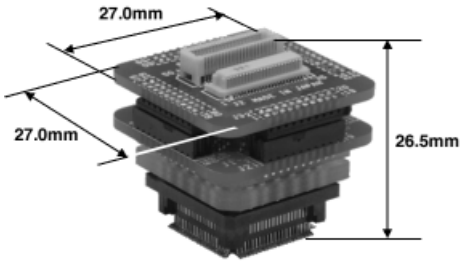
Solder the TQPACK80SB (included with the product) to the foot pattern for 80-pin 0.65mm-pitch QFP (80P6S-A) provided on the target. Then connect the FLX100 that is fitted to the emulation pod to the connector provided on this board. Also, by attaching M3T-80LCC-DMS to the connector provided on this board, you can mount an EPROM-version MCU on the target.

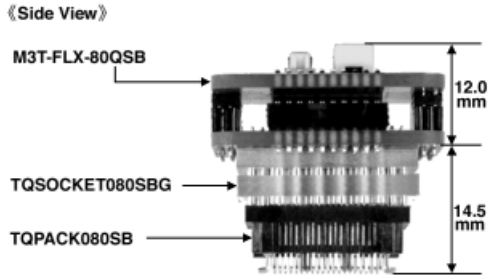
Package Components

- M3T-FLX-80QSB
- TQSOCKET080SBG (made by Tokyo Eletech Co., Ltd.)
- TQPACK080SB (made by Tokyo Eletech Co., Ltd.)
- User's manual

*Required components to connect to the target system are included with this product package. Each component made by Tokyo Eletech Co., Ltd. is optionally available alone from Tokyo Eletech Co., Ltd.
See Appendix G "Contact Addresses for Partner Products".

External View and Dimensions





Foot Pattern Reference Dimensions

See Appendix E "List of TQPACK/NQPACK Foot Patterns Made by Tokyo Eletech Co., Ltd."

[Ordering Information] See Appendix H "Ordering Information".

PCA4687A

Converter for Connecting 100-pin 0.65mm-pitch QFP to 100-pin 0.65mm-pitch LCC

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

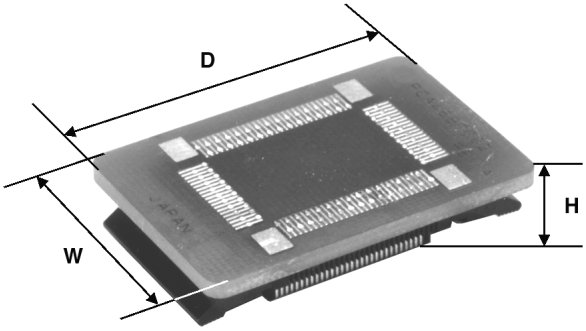
The PCA4687A is a board for converting 100-pin 0.65mm-pitch QFP (100P6S-A) to 100-pin 0.65mm-pitch LCC (100D0).

Application

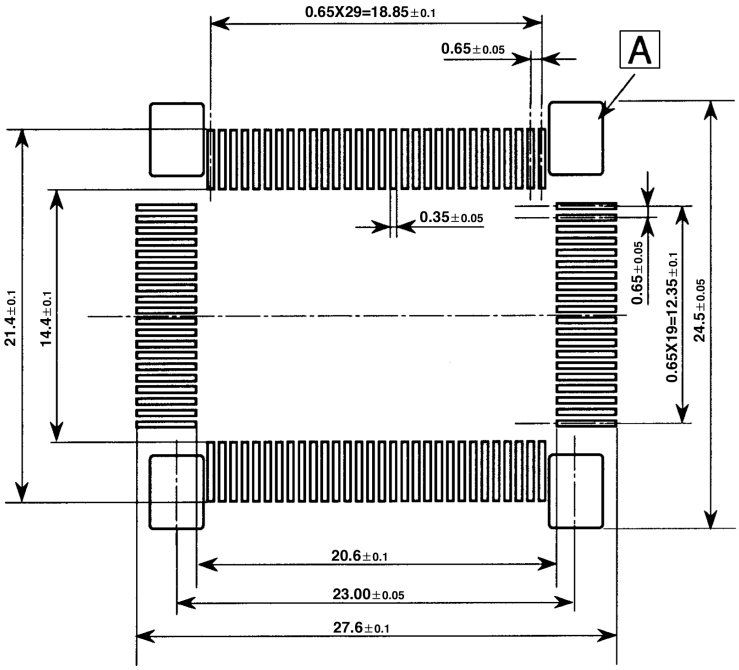
Solder an MCU housed in the 100-pin 0.65mm-pitch QFP package to the foot pattern on this board. Then fit this board into the 100-pin LCC socket on the target.

Dimensions

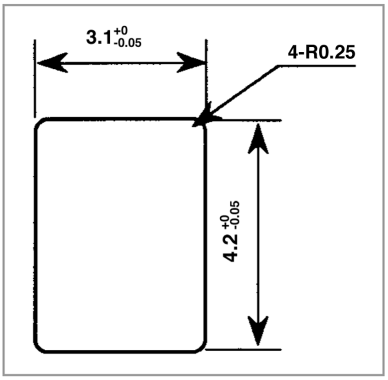
42.0(D)×28.0(W)×12.0(H)mm



Reference Foot Pattern (Unit: mm)



Detailed view of A



[Ordering Information] See Appendix H "Ordering Information".

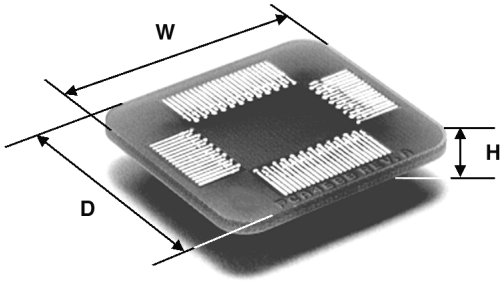
PCA4688A

Converter for Connecting 80-pin 0.8mm-pitch QFP to 80-pin 0.8mm-pitch LCC

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4688A is a board for converting 80-pin 0.8mm-pitch QFP (80P6-B or 80P6N-A) to 80-pin 0.8mm-pitch LCC (80D0).



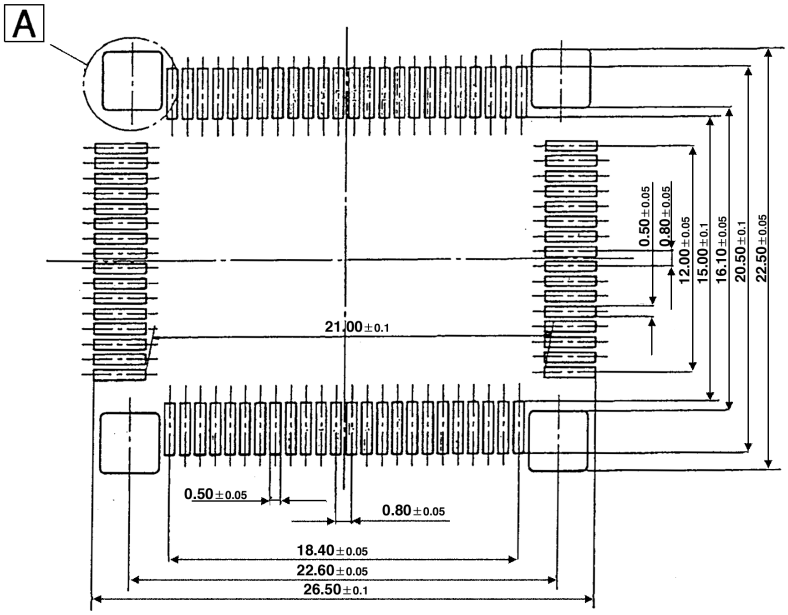
Application

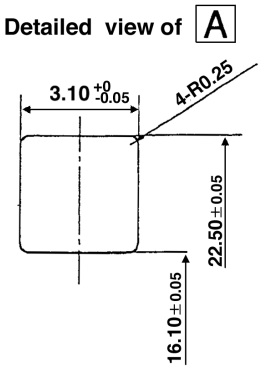
Use the PCA4688A to solder the 80-pin 0.8mm-pitch QFP package MCU, etc. to the foot pattern of the PCA4688A and to insert the PCA4688A into the 80-pin LCC socket on the target.

Dimensions

36.0(D)×40.0(W)×9.0(H)mm

Reference Foot Pattern (Unit: mm)





[Ordering Information] See Appendix H "Ordering Information".

PCA7759

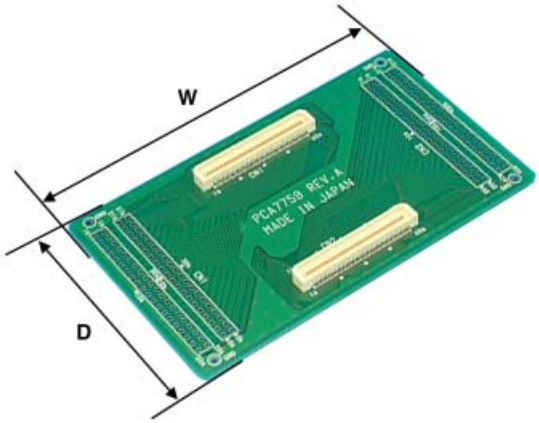
MCU Signal Measurement Board for Renesas Emulator

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA7759 is a board for MCU signal measurement which is connected between an emulation probe or emulator and a package converter (M3T-FLX-144NSE etc.). The PCA7759 can be used for the following package converters which can connect with 160-core flexible board FLX160.

- M3T-F160-100NSD
- M3T-F160-128NRD
- M3T-FLX-120NSE
- M3T-FLX-144NSD
- M3T-FLX-144NSE
- M30800T-PTC, etc.



Application

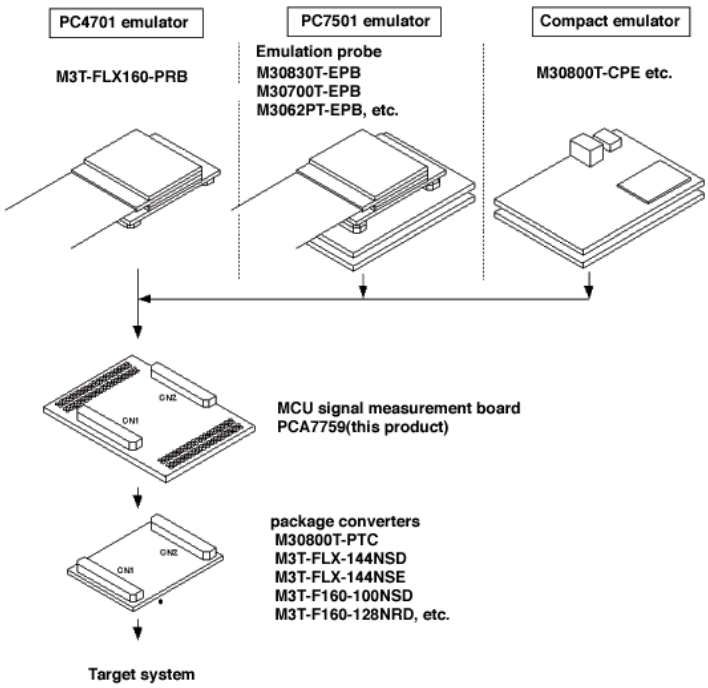
You can confirm each signal of MCU in the hole of 2.54mm pitch when you connect a PCA7759 between emulation probe or emulator and a package converter. You can measure each signal of MCU easily.

Attaching Procedure

(1) On top of the target system, attach the package converter (M30800T-PTC etc.) and the PCA7759.
(2) Attach the emulation probe or emulator on top of (1).

Dimensions

65.0(D)×110.0(W)mm



**NOTE:To remove the PCA7759,be sure not to use any tools.
Using a screwdriver may cause a damage of the pattern on a board.**

[Ordering Information] See Appendix H "Ordering Information".

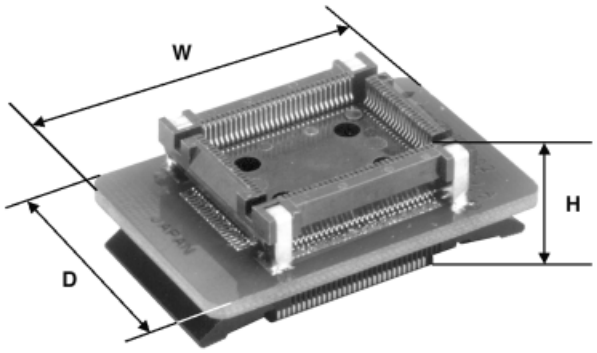
PCA4687B

Converter for Connecting 100-pin 0.65mm-pitch LCC to 100-pin 0.65mm-pitch LCC (for Height Adjustment)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4687B is a board for converting 100-pin 0.65mm-pitch LCC (100D0) to 100-pin 0.65mm-pitch LCC (100D0). You can get a height of 9mm from the target by using the PCA4687B.



Application

Use the PCA4687B to insert into the LCC socket on the target and to insert the emulator MCU into the 100-pin LCC socket on the PCA4687B.

Dimensions

28.0(D)×42.5(W)×18.6(H)mm

Foot Pattern Reference Dimensions

See Appendix C "Reference Dimensional Drawings for Common 100-pin 0.65mm-pitch QFP Foot Pattern".

[Ordering Information] See Appendix H "Ordering Information".

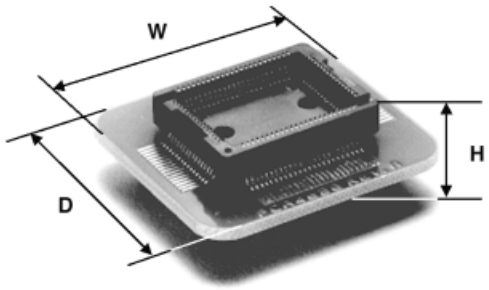
PCA4688B

Converter for Connecting 80-pin 0.8mm-pitch LCC to 80-pin 0.8mm-pitch LCC (for Height Adjustment)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4688B is a board for converting 80-pin 0.8mm-pitch LCC (80D0) to 80-pin 0.8mm-pitch LCC (80D0). You can get a height of 9mm from the target by using the PCA4688B.



Application

Use the PCA4688B to insert it into the LCC socket on the target and to insert the emulator MCU into the 80-pin LCC socket on the PCA4688B.

Dimensions

36.0(D)×40.0(W)×15.5(H)mm

Foot Pattern Reference Dimensions

See Appendix B "Reference Dimensional Drawing for Common 80-pin 0.8mm-pitch QFP Foot Pattern".

[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX100-T/M3T-FLX100-R

Board for converting direction by 90/180°

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

These boards orient the direction of an emulation pod with an FLX100 (50-pin narrow-pitch connector x 2 pcs.) probe tip by 90/180°.

Application

When connecting an emulation pod with an FLX100 probe tip form to a dummy IC (M3T-DUMMY100S) etc. , use the M3T-FLX100-T. It allows the emulation pod to be installed at a position 90° counterclockwise from the corresponding position on the dummy IC. Similarly, the M3T-FLX100-R allows the emulation pod to be installed at a position 180° counterclockwise from the corresponding position on the dummy IC.

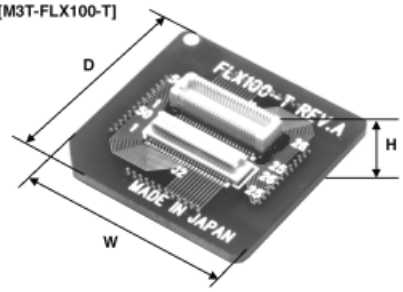
Dimensions

30.0(D)×30.0(W)×10.0(H)mm

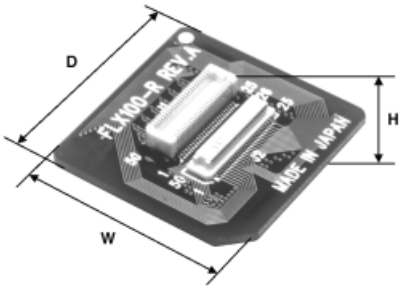
Usage Example

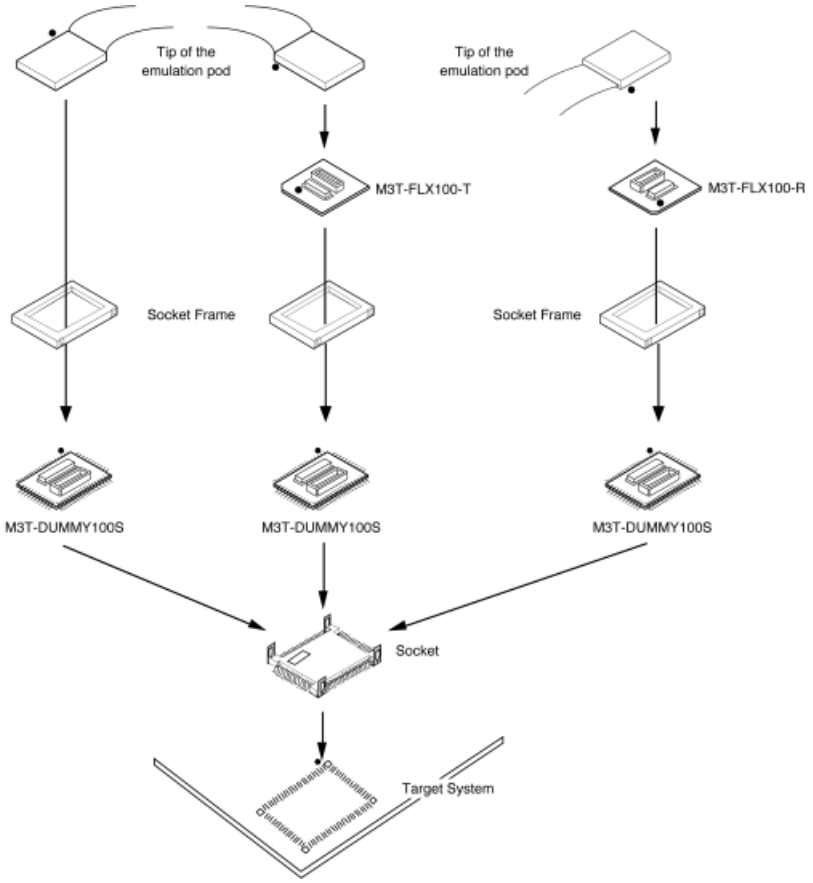
*The example of when you use the M3T-DUMMY100S is as follows.

[M3T-FLX100-T]



[M3T-FLX100-R]





* ● : Position of No. 1 pin

[Ordering Information] See Appendix H "Ordering Information".

M3T-FLX64-T/M3T-FLX64-R

Board for converting direction by 90/180°

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

These boards orient the direction of an emulation pod with an FLX64 (40-pin narrow-pitch connector x 2 pcs.) probe tip by 90/180°.

Application

When connecting an emulation pod with an FLX64 probe tip form to a dummy IC (M3T-DUMMY64) etc., use the M3T-FLX64-T. It allows the emulation pod to be installed at a position 90° counterclockwise from the corresponding position on the dummy IC. Similarly, the M3T-FLX64-R allows the emulation pod to be installed at a position 180° counterclockwise from the corresponding position on the dummy IC.

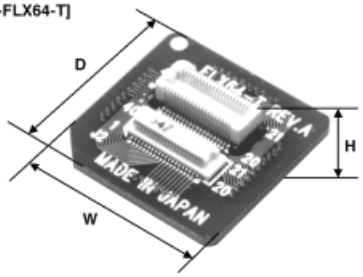
Dimensions

24.0(D)×24.0(W)×10.0(H)mm

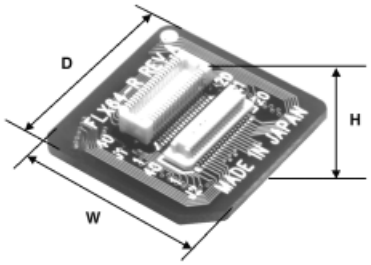
Usage Example

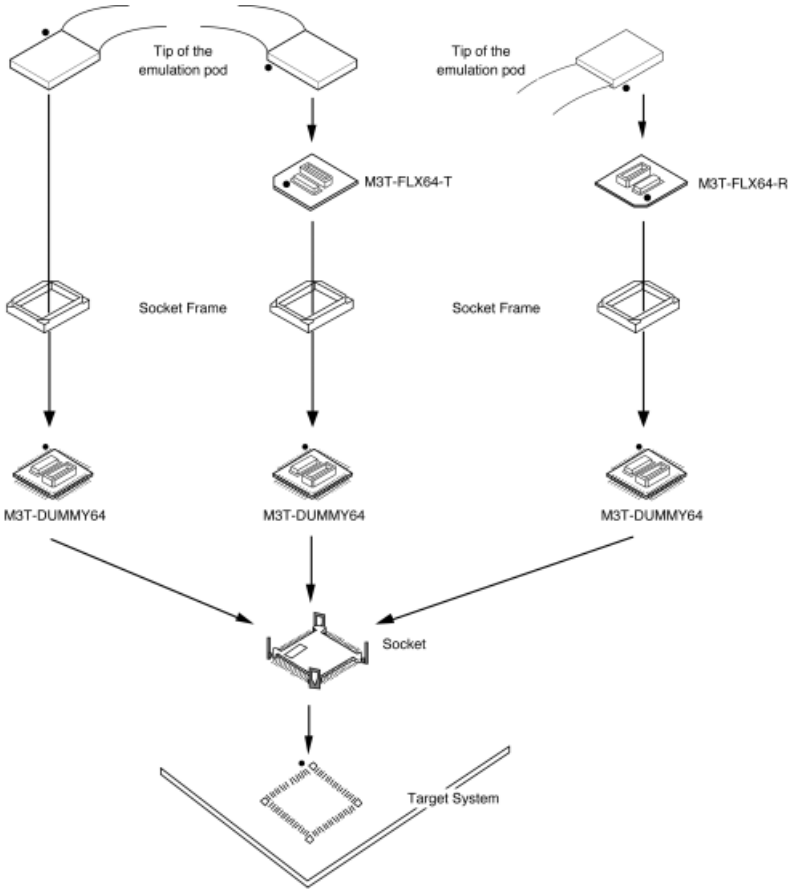
*The example of when you use the M3T-DUMMY64 is as follows.

[M3T-FLX64-T]



[M3T-FLX64-R]





* ● : Position of No. 1 pin

[Ordering Information] See Appendix H "Ordering Information".

M3T-100LCC-DMS

Converter for Connecting 100-pin 0.65mm-pitch LCC to M3T-DUMMY100S

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter connects a 100-pin 0.65mm-pitch LCC (100D0) package to the connector provided at the top of the M3T-DUMMY100S.

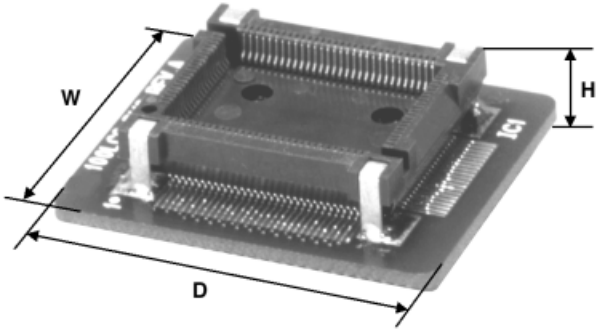
Application

Use this converter when you have M3T-DUMMY100S mounted on the target system and want to connect an EPROM-version MCU (100D0) or emulation pod probe (100D0) to the target system.

Dimensions

38.2(D)×32.0(W)×11.5(H)mm

[Ordering Information] See Appendix H "Ordering Information".



M3T-64LCC-DMS

Converter for Connecting 64-pin 0.8mm-pitch LCC to M3T-DUMMY64

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter connects a 64-pin 0.8mm-pitch LCC (64D0) package to the connector provided at the top of the M3T-DUMMY64.

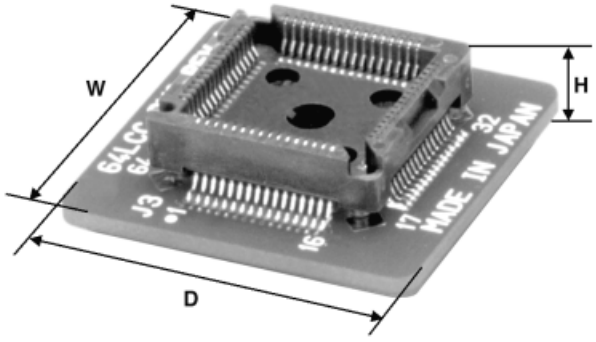
Application

Use this converter when you have M3T-DUMMY64 mounted on the target system and want to connect an EPROM-version MCU (64D0) or emulation pod probe (64D0) to the target system.

Dimensions

32.0(D)×32.0(W)×11.5(H)mm

[Ordering Information] See Appendix H "Ordering Information".



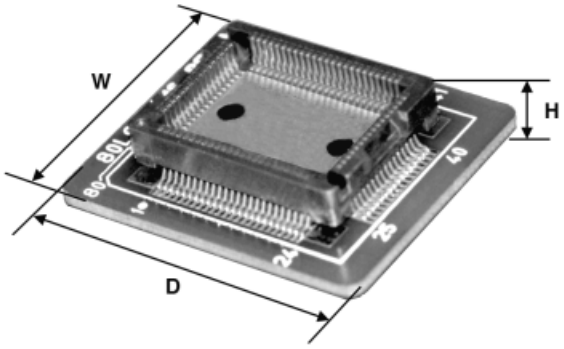
M3T-80LCC-DMS

Converter for Connecting 80-pin 0.8mm-pitch LCC to M3T-DUMMY80

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This converter connects an 80-pin 0.8mm-pitch LCC (80D0) package to the connector provided at the top of the M3T-DUMMY80.



Application

Use this converter when you have M3T-DUMMY80 mounted on the target system and want to connect an EPROM-version MCU (80D0) or emulation pod probe (80D0) to the target system.

Dimensions

38.0(D)×32.0(W)×11.5(H)mm

[Ordering Information] See Appendix H "Ordering Information".

M3T-DCT42B-450

Direct Dummy IC for 42-pin 0.8mm-pitch SSOP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This accessory tool connects an emulation pod and the target. It can be mounted on the same foot pattern as the MCU housed in the 42-pin 0.8mm-pitch SSOP (42P2R-A) package.

Attaching Procedure

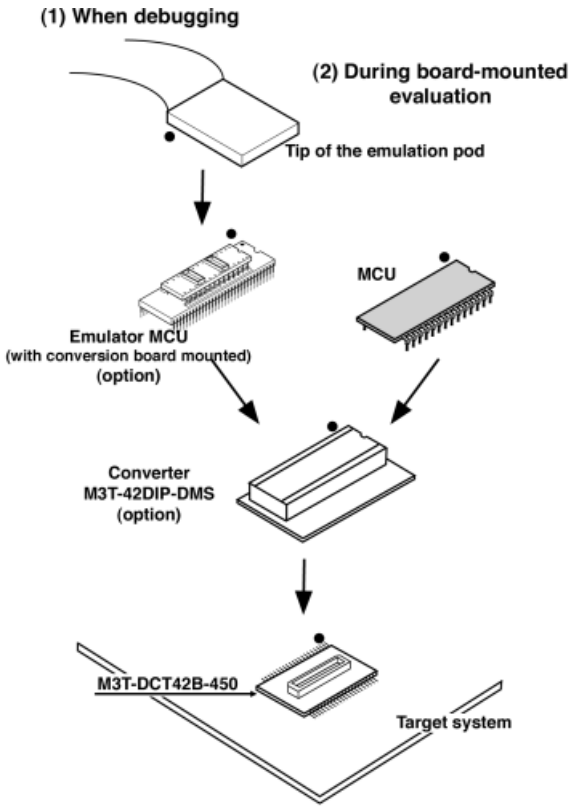
This converter can be used during debugging and board-mounted evaluation in common.

When debugging

(1) Mount this dummy IC on the foot pattern.
(2) Mount a converter (e.g. M3T-FLX-DCT503) on top of (1).
(3) Then connect the emulation pod to the connector provided on the converter.
Also, when using an emulator MCU housed in the 42-pin 1.778mm-pitch SDIP (42P4B or 42S1B-A), use the converter M3T-42DIP-DMS between the MCU and the M3T-DCT42B-450.

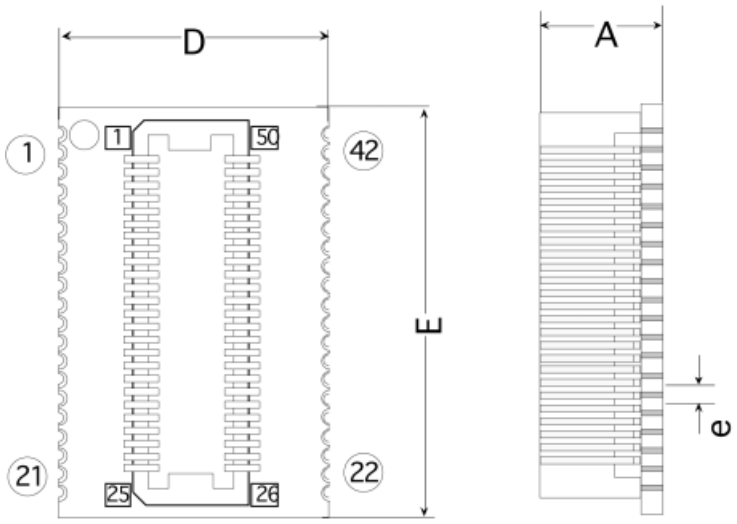
During board-mounted evaluation

Attach the converter M3T-42DIP-DMS to the dummy IC (M3T-DCT42B-450) on the target system.



* ● : Position of No. 1 pin
* When using the emulation pod M37515T-RPD, the converter M3T-FLX-DCT503 is required.

Dimensions



① denotes pin numbers on the M3T-DCT42B－450.
1 denotes pin numbers of the top of a connector.

Symbol	Term	Dimensions [mm]
A	Fitting height	5.0
D	Package length	11.8
E	Package width	17.5
e	Interval in row of pins	0.8

Foot Pattern Reference Dimensions

See Appendix D "Reference Dimensional Drawings for SSOP Package Foot Pattern Made by Matsushita Electric Works, Ltd."

[Ordering Information] See Appendix H "Ordering Information".

M3T-DIRECT100S

Direct Dummy IC for 100-pin 0.65mm-pitch QFP

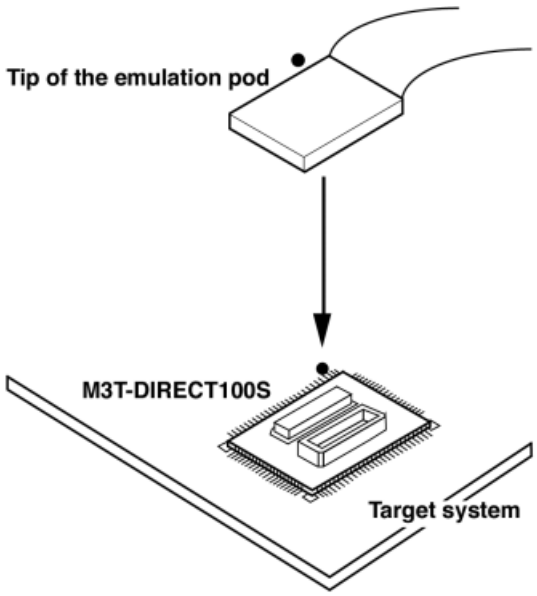
REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This accessory tool connects an emulation pod and the target. It can be mounted on the same foot pattern as the MCU housed in the 100-pin 0.65mm-pitch QFP (100P6S-A or 100P6S-E) package.

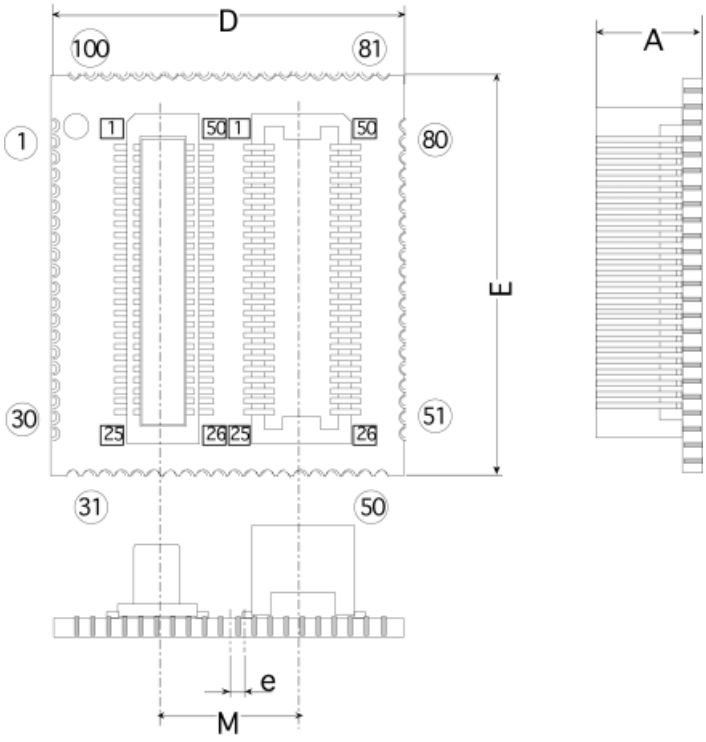
Attaching Procedure

Mount this dummy IC on the foot pattern on the target. Then connect the emulation pod to the connector provided at the top of this dummy IC.



* ● : Position of No. 1 pin

Dimensions



① denotes pin numbers on the M3T-DIRECT100S.
[1] denotes pin numbers of the top of a connector.

Symbol	Term	Dimensions [mm]
A	Fitting height	5.4
D	Package length	17.0
E	Package width	23.0
e	Interval in row of pins	0.65
M	Mount pad size	6.3

Foot Pattern Reference Dimensions

See Appendix C "Reference Dimensional Drawings for Common 100-pin 0.65mm-pitch QFP Foot Pattern".

[Ordering Information] See Appendix H "Ordering Information".

M3T-DIRECT80S

Direct Dummy IC for 80-pin 0.65mm-pitch SSOP

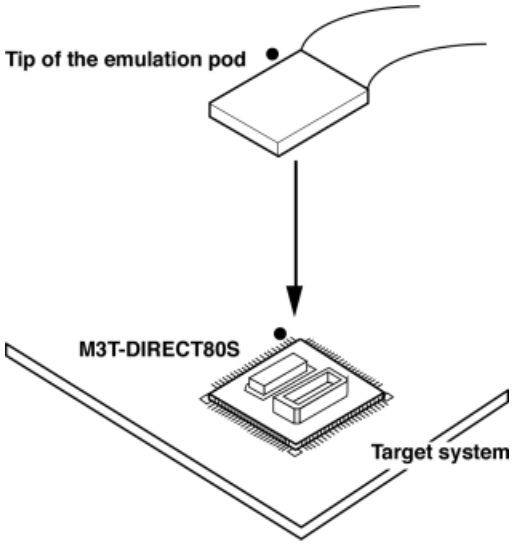
REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This accessory tool connects an emulation pod and the target. It can be mounted on the same foot pattern as the MCU housed in the 80-pin 0.65mm-pitch QFP (80P6S-A) package.

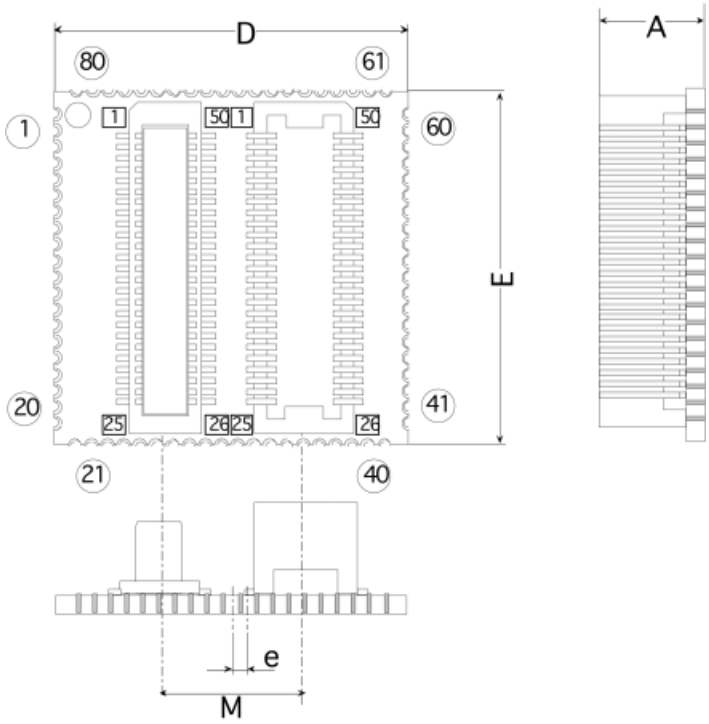
Attaching Procedure

Mount this dummy IC on the foot pattern on the target. Then connect the emulation pod to the connector provided at the top of this dummy IC.



* ● : Position of No. 1 pin

Dimensions



① denotes pin numbers on the M3T-DIRECT80S.
[1] denotes pin numbers of the top of a connector.

Symbol	Term	Dimensions [mm]
A	Fitting height	4.9
D	Package length	16.8
E	Package width	16.8
e	Interval in row of pins	0.65
M	Mount pad size	6.3

[Ordering Information] See Appendix H "Ordering Information".

M3T-DUMMY100S

Dummy IC for 100-pin 0.65mm-pitch QFP (100P6S-A, 100P6S-E)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This accessory tool connects the probe of an emulation pod and the target, or an MCU and the target. Its dimensions are the same as those of the MCU for the 100-pin 0.65mm-pitch QFP (100P6S, 100P6S-E) package.

It consists of parts (1) to (3) shown in the diagram.

Attaching Procedure

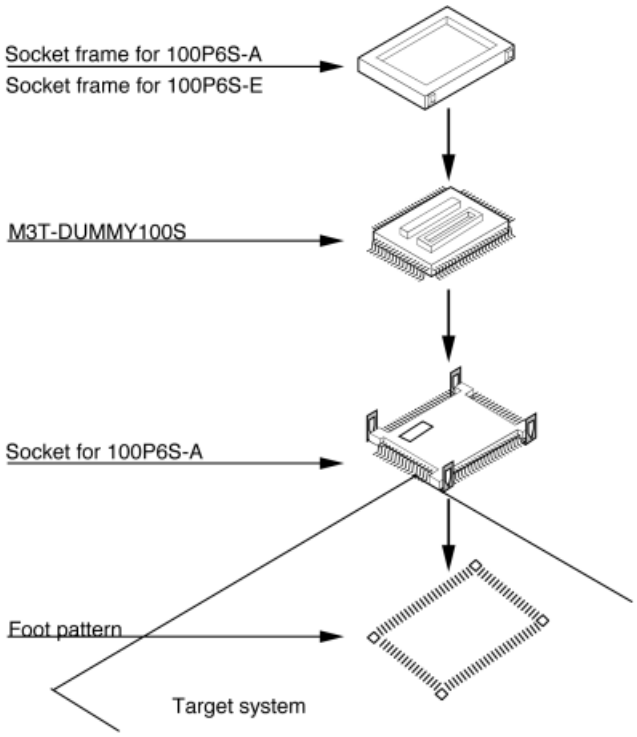
This converter can be used during debugging and board-mounted evaluation in common.

When debugging

(1) Mount a socket on the foot pattern on the target.
(2) On top of it, mount the M3T-DUMMY100S and a socket frame in that order.
(3) Then connect the probe of the emulation pod to the connector provided at the top of the M3T-DUMMY100S.

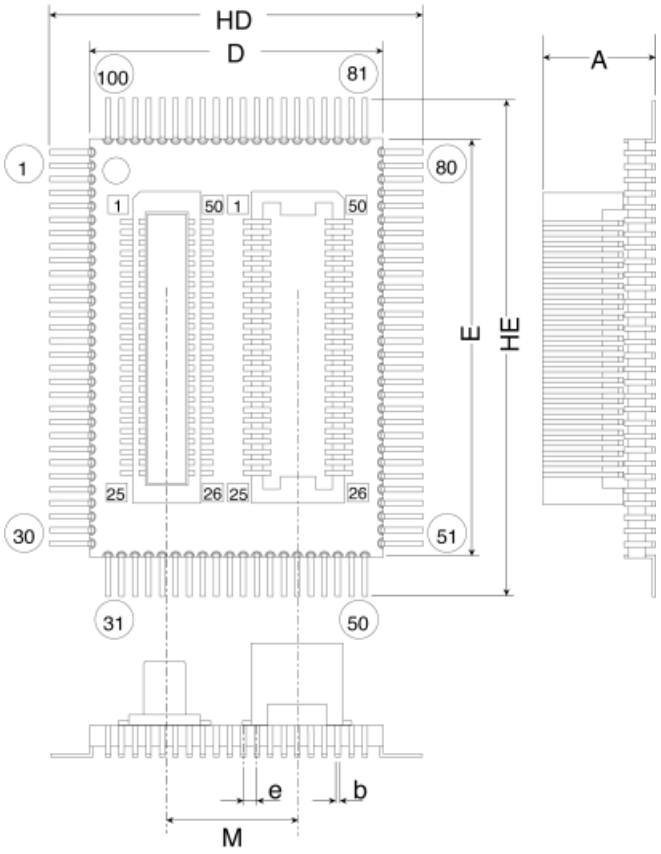
During board-mounted evaluation

Mount an MCU and a socket frame on a socket on the target in that order.



* The 100P6S-E is an IC package whose lead wire is longer than that of 100P6S-A.

Dimensions



① denotes pin numbers on the M3T-DUMMY100S.
[1] denotes pin numbers of the top of a connector.

Symbol	Term	Dimensions [mm]
A	Fitting height	5.0
b	Pin width	0.25
D	Package length	14.0
E	Package width	20.0
e	Interval in row of pins	0.65
HD	Overall length	18.0
HE	Overall width	24.0
M	Mount pad size	6.3

Foot Pattern Reference Dimensions

See Appendix C "Reference Dimensional Drawings for Common 100-pin 0.65mm-pitch QFP Foot Pattern".

[Ordering Information] See Appendix H "Ordering Information".

M3T-DUMMY64

Dummy IC for 64-pin 0.8mm-pitch QFP (64P6N-A)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This accessory tool connects the probe of an emulation pod and the target, or an MCU and the target. Its dimensions are the same as those of the MCU for the 64-pin 0.8mm-pitch QFP (64P6N-A) package.
It consists of parts (1) to (3) shown in the diagram.

Attaching Procedure

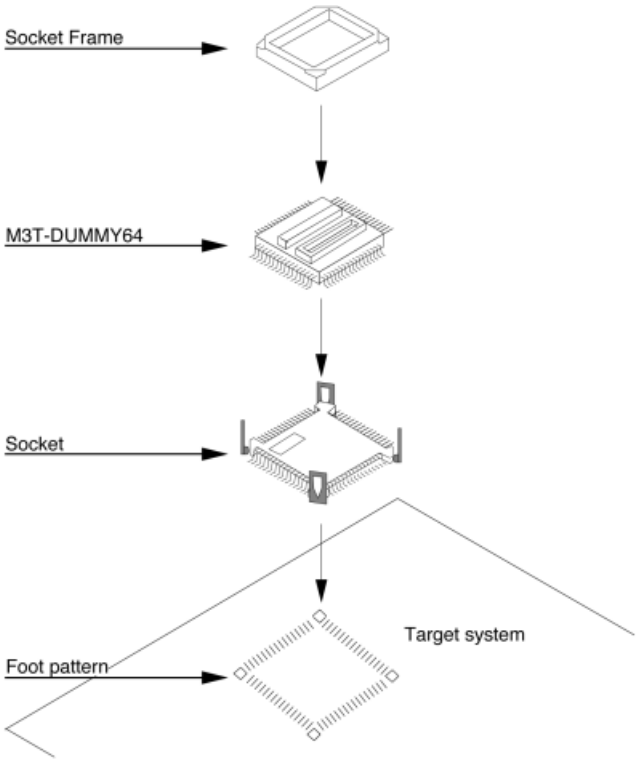
This converter can be used during debugging and board-mounted evaluation in common.

When debugging

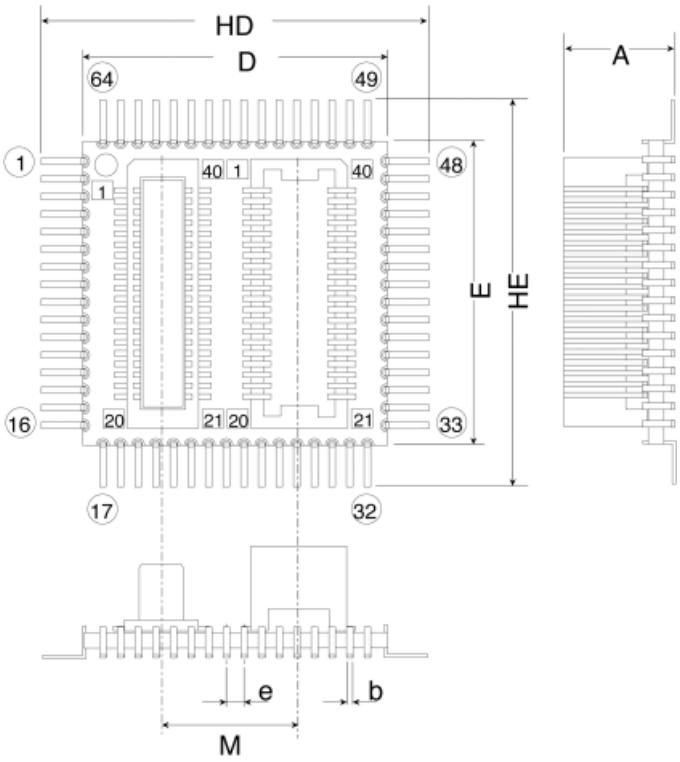
(1) Mount a socket on the foot pattern on the target.
(2) On top of it, mount the M3T-DUMMY64 and a socket frame in that order.
(3) Then connect the probe of the emulation pod to the connector provided at the top of the M3T-DUMMY64.

During board-mounted evaluation

Mount an MCU and a socket frame on a socket on the target in that order.



Dimensions



① denotes pin numbers of the M3T-DUMMY64.
1 denotes pin numbers of the top of a connector.

Symbol	Term	Dimensions [mm]
A	Fitting height	5.0
b	Pin width	0.3
D	Package length	14.0
E	Package width	14.0
e	Interval in row of pins	0.8
HD	Overall length	18.0
HE	Overall width	18.0
M	Mount pad size	6.3

Foot Pattern Reference Dimensions

See Appendix A "Reference Dimensional Drawing for Common 64-pin 0.8mm-pitch QFP Foot Pattern".

[Ordering Information] See Appendix H "Ordering Information".

M3T-DUMMY80

Dummy IC for 80-pin 0.8mm-pitch QFP (80P6N-A)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This accessory tool connects the probe of an emulation pod and the target, or an MCU and the target. Its dimensions are the same as those of MCU for the 80-pin 0.8mm-pitch QFP (80P6N-A) package.
It consists of (1) to (3) shown in the diagram.

Attaching Procedure

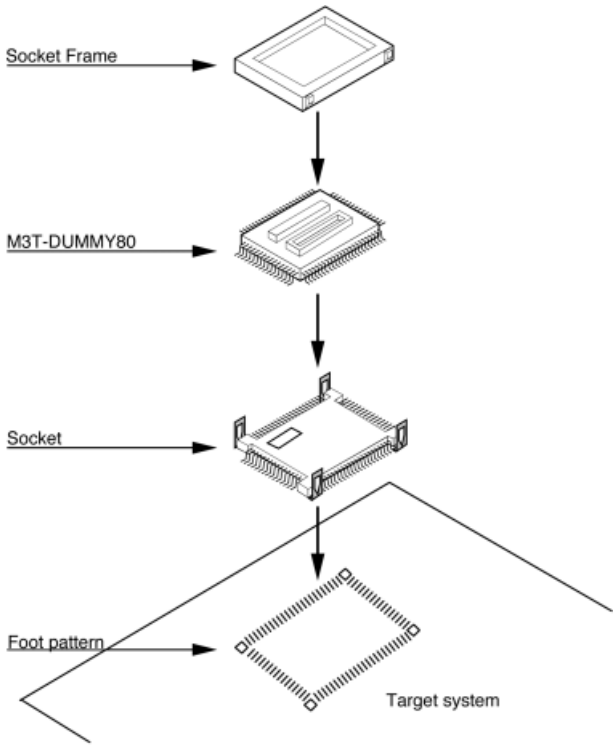
This converter can be used during debugging and board-mounted evaluation in common.

When debugging

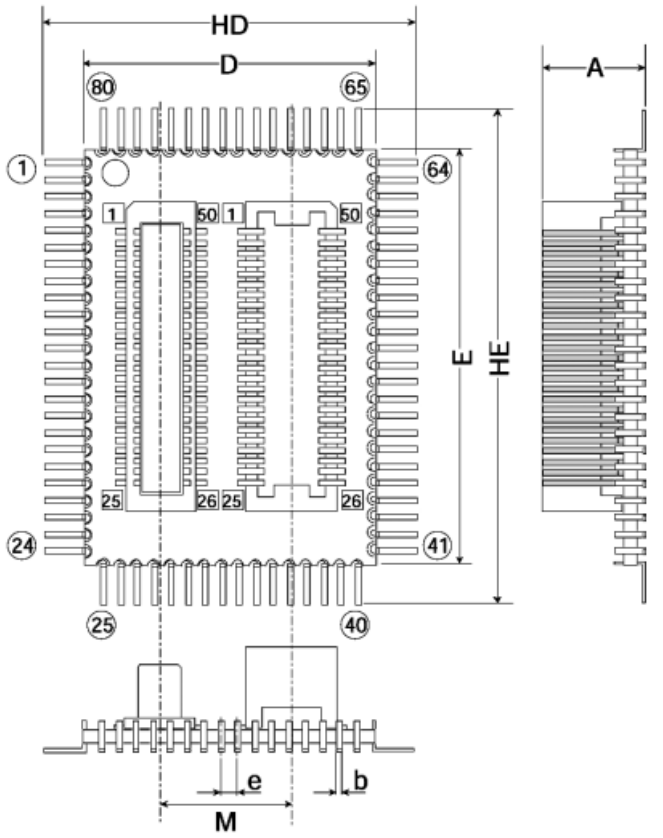
(1) Mount a socket on the target.
(2) On top of it, mount the M3T-DUMMY80 and a socket frame in that order.
(3) Then connect the probe of the emulation pod to the connector provided at the top of the M3T-DUMMY80.

During board-mounted evaluation

Mount an MCU and a socket frame on a socket on the target in that order.



Dimensions



① denotes pin numbers on the M3T-DUMMY80.
[1] denotes pin numbers of the top of a connector.

Symbol	Term	Dimensions [mm]
A	Fitting height	5.0
b	Pin width	0.3
D	Package length	14.0
E	Package width	20.0
e	Interval in row of pins	0.8
HD	Overall length	18.0
HE	Overall width	24.0
M	Mount pad size	6.3

Foot Pattern Reference Dimensions

See Appendix B "Reference Dimensional Drawing for Common 80-pin 0.8mm-pitch QFP Foot Pattern".

[Ordering Information] See Appendix H "Ordering Information".

M3T-SSOP36B-450

Direct Dummy IC for 36-pin 0.8mm-pitch SSOP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This accessory tool connects the probe of an emulation pod and the target, or an MCU and the target. Its dimensions are the same as those of the MCU for the 36-pin 0.8mm-pitch SSOP (36P2R-A) package.

It consists of parts (1) to (2) shown in the diagram below.

Attaching Procedure

This converter can be used during debugging and board-mounted evaluation in common.

When debugging

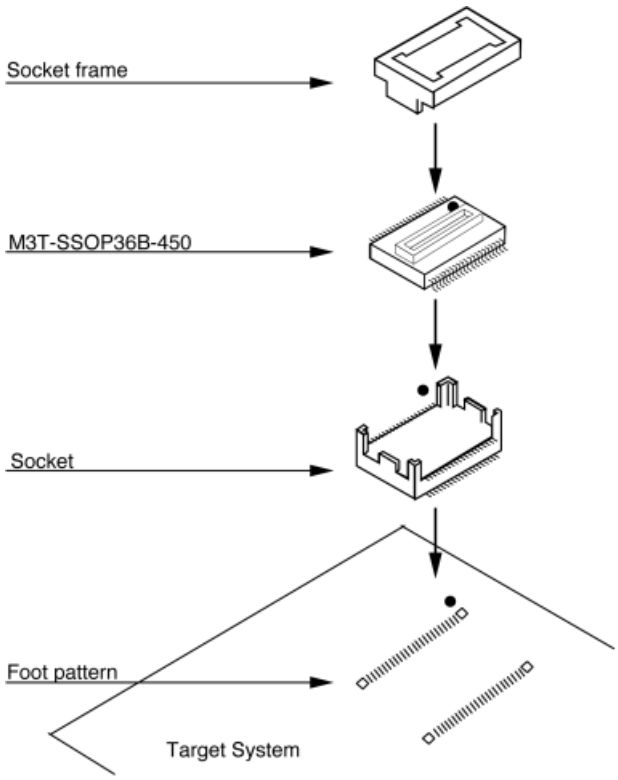
(1) Mount a socket on the foot pattern on the target.

(2) On top of it, mount the M3T-SSOP36B-450 and a socket frame in that order.

(3) Then connect the probe of the emulation pod, etc. to the connector provided at the top of the M3T-SSOP36B-450.

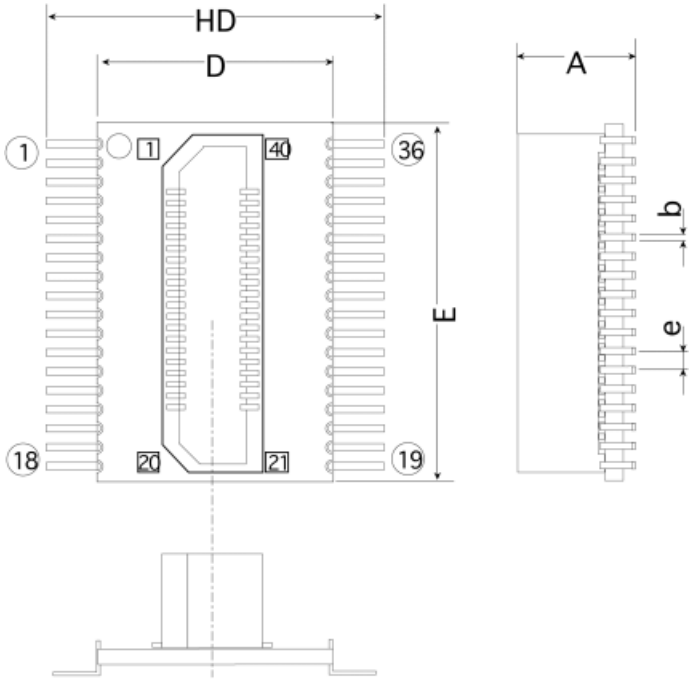
During board-mounted evaluation

Mount an MCU and a socket frame on a socket on the target in that order.



* ● : Position of No. 1 pin

Dimensions



① denotes pin numbers on the M3T-SSOP36B-450.

1 denotes pin numbers of the top of a connector.

Symbol	Term	Dimensions [mm]
A	Fitting height	4.2
b	Pin width	0.3
D	Package length	8.4
E	Package width	15.0
e	Interval in row of pins	0.8
HD	Overall length	12.4

Foot Pattern Reference Dimensions

See Appendix D "Reference Dimensional Drawings for SSOP Package Foot Pattern Made by Matsushita Electric Works, Ltd."

[Ordering Information] See Appendix H "Ordering Information".

M3T-SSOP42B-450

Direct Dummy IC for 42-pin 0.8mm-pitch SSOP

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

This accessory tool connects the probe of an emulation pod and the target, or an MCU and the target. Its dimensions are the same as those of the MCU for the 42-pin 0.8mm-pitch SSOP (42P2R-A) package.

It consists of parts (1) to (3) shown in the diagram below.

Attaching Procedure

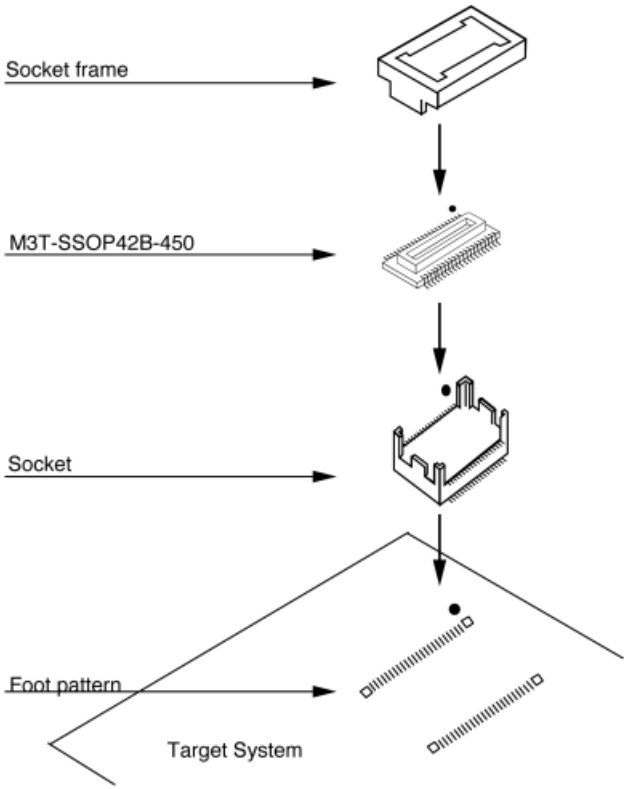
This converter can be used during debugging and board-mounted evaluation in common.

When debugging

(1) Mount a socket on the foot pattern on the target.
(2) On top of it, mount the M3T-SSOP42B-450 and a socket frame in that order.
(3) Then connect the probe of the emulation pod, etc. to the connector provided at the top of the M3T-SSOP42B-450.

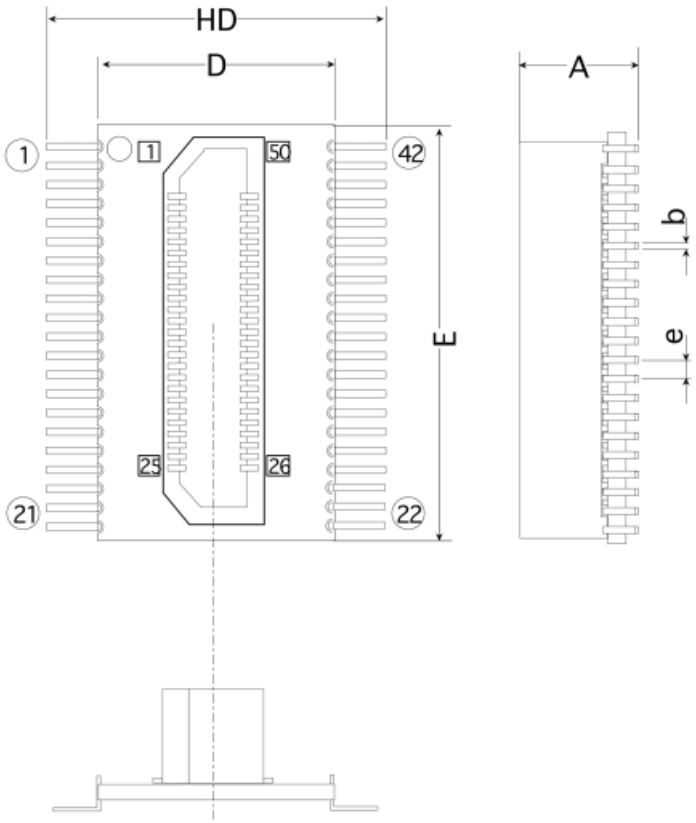
During board-mounted evaluation

Mount an MCU and a socket frame on a socket on the target in that order.



* ● : Position of No. 1 pin

Dimensions



① denotes pin numbers on the M3T-SSOP42B-450.
[1] denotes pin numbers of the top of a connector.

Symbol	Term	Dimensions [mm]
A	Fitting height	4.2
b	Pin width	0.3
D	Package length	8.4
E	Package width	17.5
e	Interval in row of pins	0.8
HD	Overall length	12.4

Foot Pattern Reference Dimensions

See Appendix D "Reference Dimensional Drawings for SSOP Package Foot Pattern Made by Matsushita Electric Works, Ltd."

[Ordering Information] See Appendix H "Ordering Information".

Chapter 3

Standard Pitch(2.54mm)Converter

Quick Guide to Standard Pitch Converter

Before conversion		Accessory type name	Note
Pin/Pitch	Renesas MCU Package code		
64-pin 0.8mm-pitch	64D0	PCA7755B	• With a cover-fitted IC socket
	64P6N-A	PCA7755A	• With a cover-fitted IC socket
80-pin 0.5mm-pitch	80P6Q-A (formerly 80P6D-A)	PCA7756	• With a cover-fitted IC socket • The PCA7756 is the substitute of the PCA7753.
80-pin 0.65mm-pitch	80P6S-A	PCA4979	• With a cover-fitted IC socket
		PCA4989	• With a cover-fitted IC socket • The pin layout of the PCA4989 is different from that of the PCA4979.
80-pin 0.8mm-pitch	80D0	PCA4981B	• With a cover-fitted IC socket
		PCA4981 BARE	• Requires an IC socket • Can be used for 80P6-B and 80P6N-A
		PCA7750G02	• With an LCC socket • Has the pattern for oscillator
		PCA7750G02-BARE	• Requires an LCC socket
		PCA4988	• With an LCC socket
	80P6-B	PCA4981A	• With a cover-fitted IC socket
		PCA4981 BARE	• Requires an IC socket • Can be used for 80D0 and 80P6N-A
	80P6N-A	PCA4981C	• With a cover-fitted IC socket
		PCA4981 BARE	• Requires an IC socket • Can be used for 80D0 and 80P6-B
100-pin 0.5mm-pitch	100P6Q-A (formerly 100P6D-A)	PCA7754	• With a cover-fitted IC socket
100-pin 0.65mm-pitch	100D0	PCA7752AG02	• With an LCC socket
		PCA7752AG02-BARE	• Requires an LCC socket • Can be used for 100P6S-A
	100P6S-A	PCA7752B	• With a cover-fitted IC socket
		PCA7752AG02-BARE	• Requires an LCC socket • Can be used for 100D0

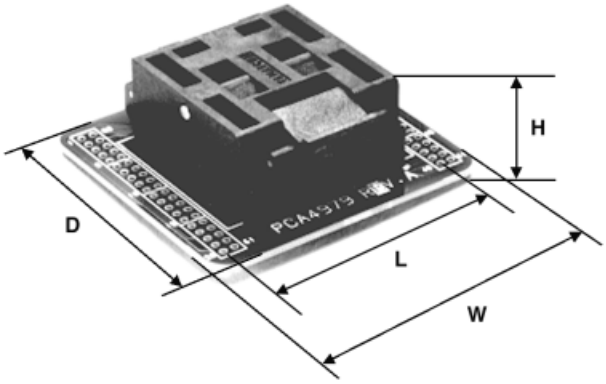
PCA4979

Converter from 80-pin 0.65mm-pitch QFP (80P6S-A) to 40-pin DIL Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4979 is a board that converts an 80-pin 0.65mm-pitch QFP (80P6S-A) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



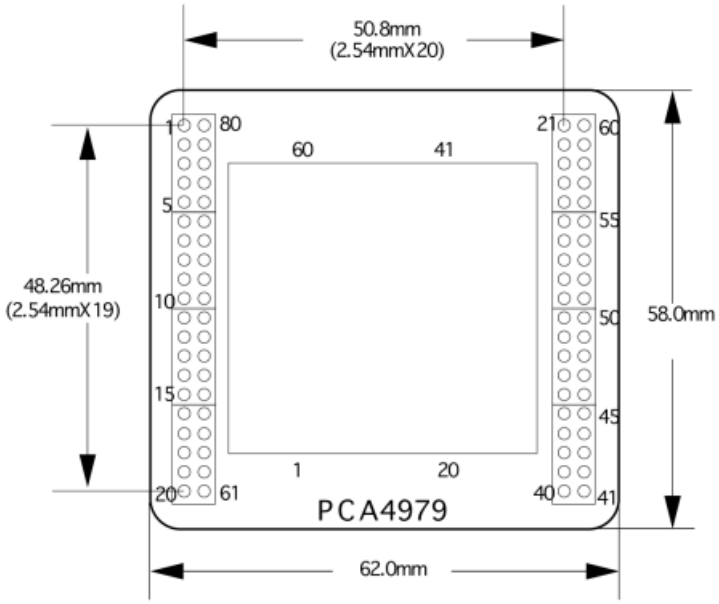
Application

Use the PCA4979 as a test board to connect an 80P6S-A MCU package to a standard pitch universal board. Since an 80P6S-A IC socket (IC51-0804-711 made by Yamaichi Electronics Co., Ltd.) is mounted on the PCA4979, it is easy to replace MCUs.

Dimensions

58.0(D)×62.0(W)×20.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

PCA4981A

Converter from 80-pin 0.8mm-pitch QFP (80P6-B) to 40-pin DIL Standard Pitch

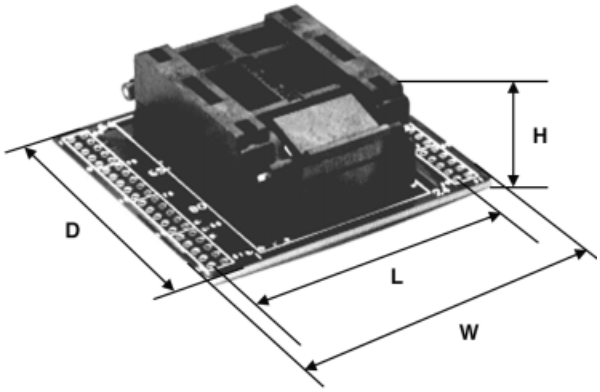
REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4981A is a board that converts an 80-pin 0.8mm-pitch QFP (80P6-B) to the standard pitch. Pin No. 1 corresponds to pin No. 1.

Application

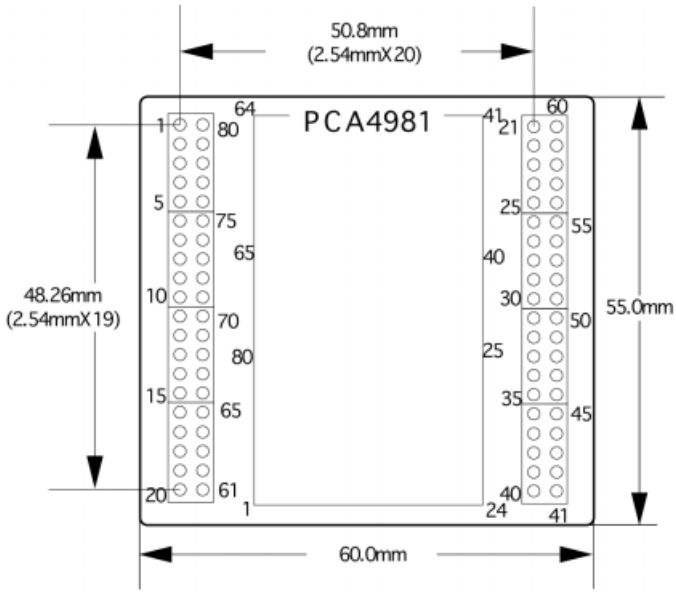
Use the PCA4981A as a test board to connect an 80P6-B MCU package to a standard pitch universal board. Since an 80P6-B IC socket (IC51-819.KS-8075 made by Yamaichi Electronics Co., Ltd.) is mounted on the PCA4981 BARE, it is easy to replace MCUs.



Dimensions

55.0(D)×60.0(W)×20.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

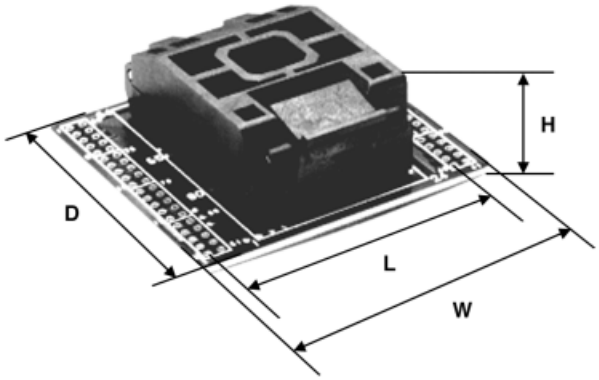
PCA4981B

Converter from 80-pin 0.8mm-pitch LCC (80D0) to 40-pin DIL Standard Pitch (with IC Socket)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4981B is a board that converts an 80-pin 0.8mm-pitch LCC (80D0) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



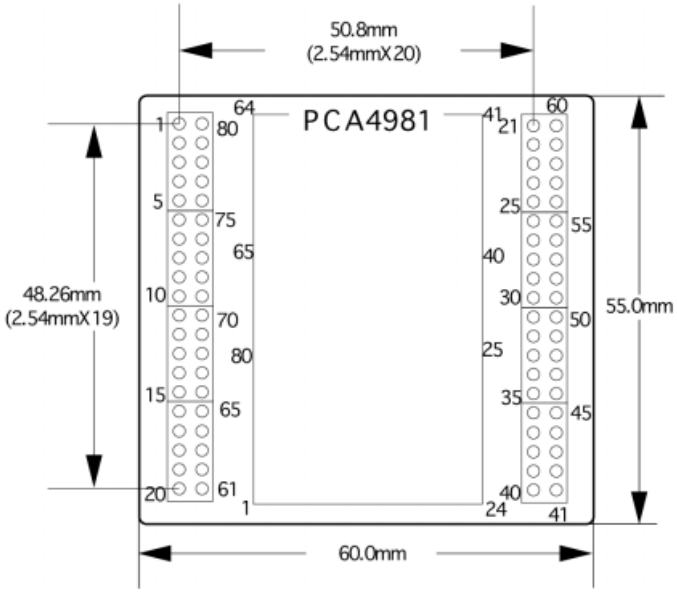
Application

Use the PCA4981B as a test board to connect an 80D0 MCU package to a standard pitch universal board. Since an 80D0 IC socket (IC51-0804-890 made by Yamaichi Electronics Co., Ltd.) is mounted on the PCA4981 BARE, it is easy to replace MCUs.

Dimensions

55.0(D)×60.0(W)×20.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

PCA4981C

Converter from 80-pin 0.8mm-pitch QFP (80P6N-A) to 40-pin DIL Standard Pitch

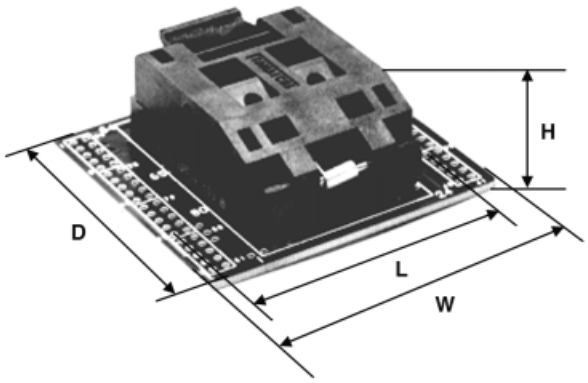
REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4981C is a board that converts an 80-pin 0.8mm-pitch QFP (80P6N-A) to the standard pitch. Pin No. 1 corresponds to pin No. 1.

Application

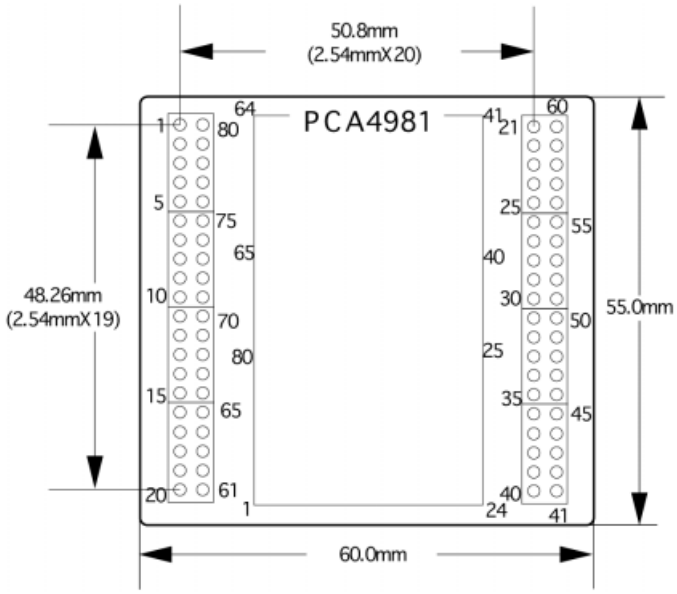
Use the PCA4981C as a test board to connect an 80P6N-A MCU package to a standard pitch universal board. Since an 80P6N-A IC socket (IC51-0804-819-6 made by Yamaichi Electronics Co., Ltd.) is mounted on the PCA4981 BARE, it is easy to replace MCUs.



Dimensions

55.0(D)×60.0(W)×20.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

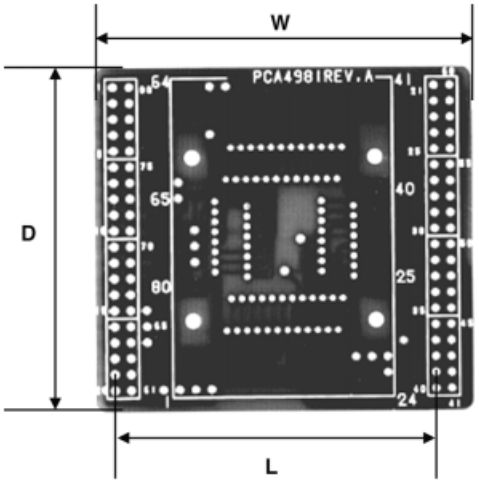
PCA4981 BARE

Converter from 80-pin 0.8mm-pitch QFP (80P6-B or 80P6N-A) or LCC (80D0) to 40-pin DIL Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4981 BARE is a board that converts an 80-pin 0.8mm-pitch QFP (80P6-B or 80P6N-A) or LCC (80D0) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



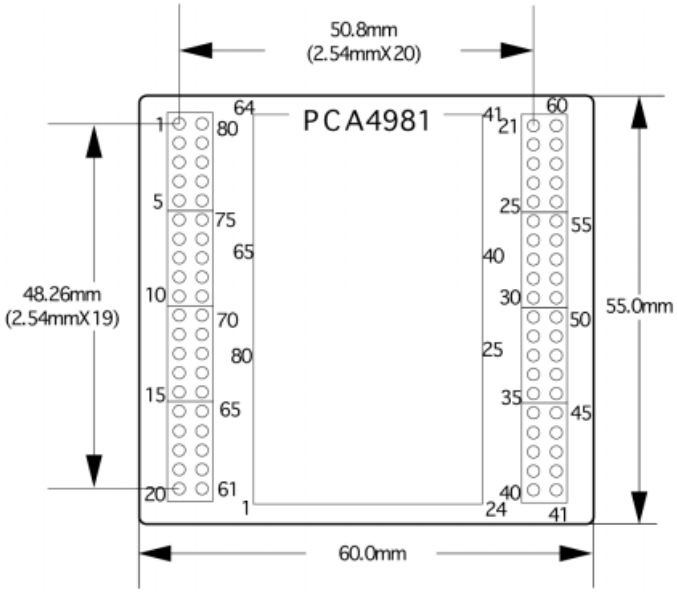
Application

Use the PCA4981 BARE as a test board to connect an 80P6-B, 80P6N-A or 80D0 MCU package to a standard pitch universal board. A cover-fitted IC socket made by Yamaichi Electronics Co., Ltd. is required.

Dimensions

55.0(D)×60.0(W)mm
(L)=50.8(2.54×20)mm

Pin Layout



Manufactured Product

For 80P6-B: PCA4981A
For 80P6N-A: PCA4981C
For 80D0: PCA4981B

[Ordering Information] See Appendix H "Ordering Information".

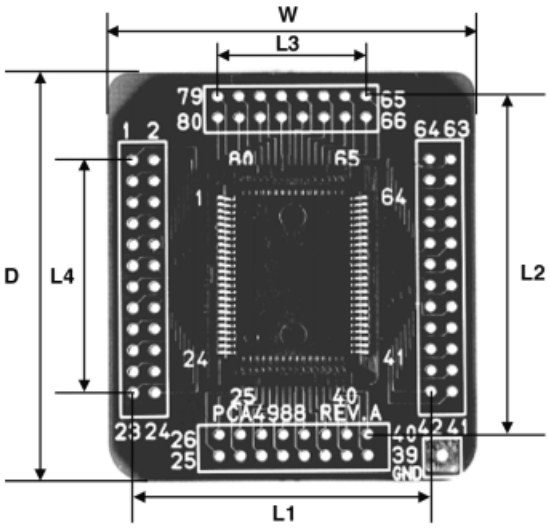
PCA4988

Converter from 80-pin 0.8mm-pitch LCC (80D0) to 40-pin DIL Standard Pitch (with LCC Socket)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4988 is a board that converts an 80-pin 0.8mm-pitch LCC (80D0) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



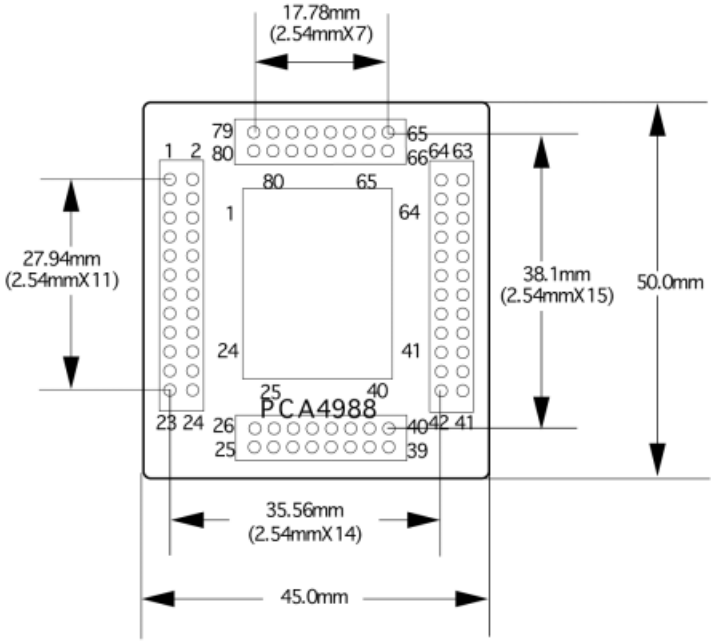
Application

Use the PCA4988 as a test board to connect an 80D0 MCU package to a standard pitch universal board. The PCA4988 has an 80-pin LCC socket mounted on its board.

Dimensions

50.0(D)×45.0(W)×6.5(H)mm
(L1)=35.56(2.54×14)mm
(L2)=38.1(2.54×15)mm
(L3)=17.78(2.54×7)mm
(L4)=27.94(2.54×11)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

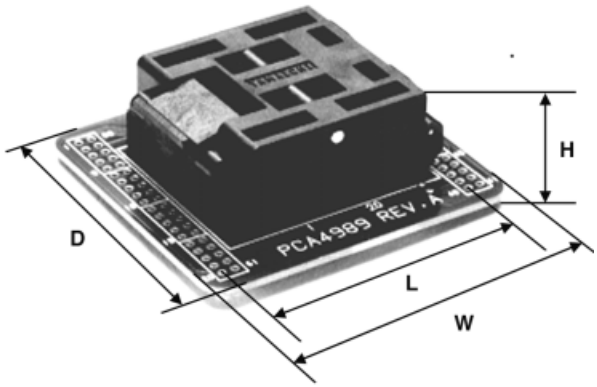
PCA4989

Converter from 80-pin 0.65mm-pitch QFP (80P6S-A) to 40-pin DIL Standard Pitch (Different Pin Layout from the PCA4979)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA4989 is a board that converts an 80-pin 0.65mm-pitch QFP (80P6S-A) to the standard pitch.



Application

Use the PCA4989 as a test board to connect an 80P6S-A MCU package to a standard pitch universal board. Since an 80P6S-A IC socket (IC51-0804-711 made by Yamaichi Electronics Co., Ltd.) is mounted on the PCA4989, it is easy to replace MCUs.

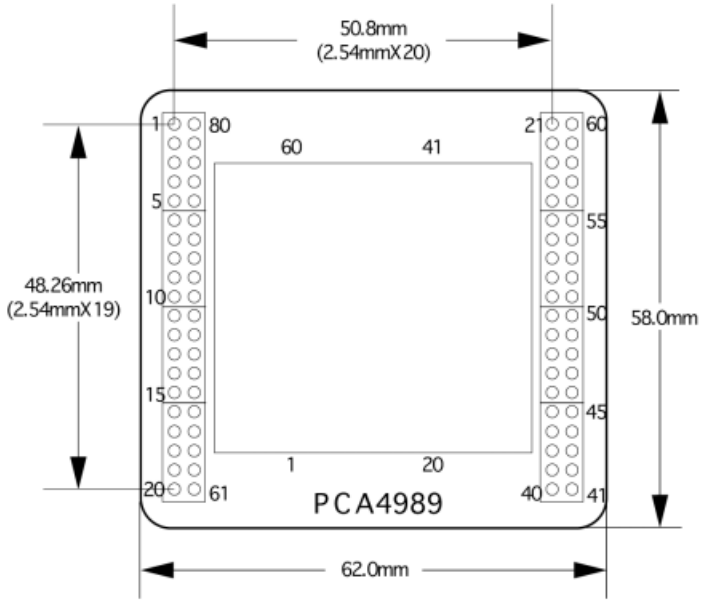
As the pin layout of the PCA4989 is that of the PCA4979 with two displaced pins, pin No. 1 of 80P6S-A IC socket of the PCA4989 corresponds to pin No. 3 of the standard pitch hole.

Dimensions

58.0(D)×62.0(W)×20.0(H)mm

(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

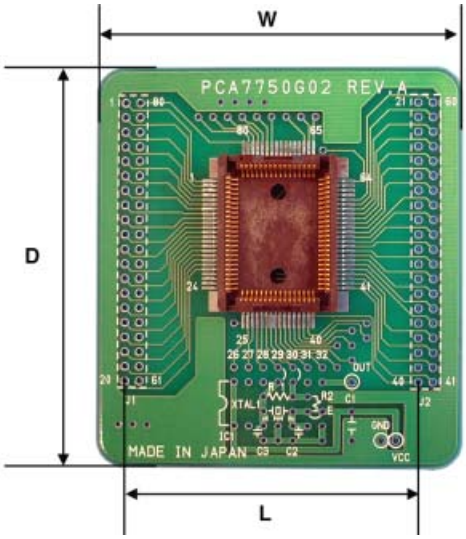
PCA7750G02

Converter board from 80-pin 0.8mm-pitch LCC (80D0) to 40-pin DIL Standard Pitch (with LCC Socket and the Pattern for Oscillator)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA7750G02 is a converter board that converts an 80-pin 0.8mm-pitch LCC (80D0) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



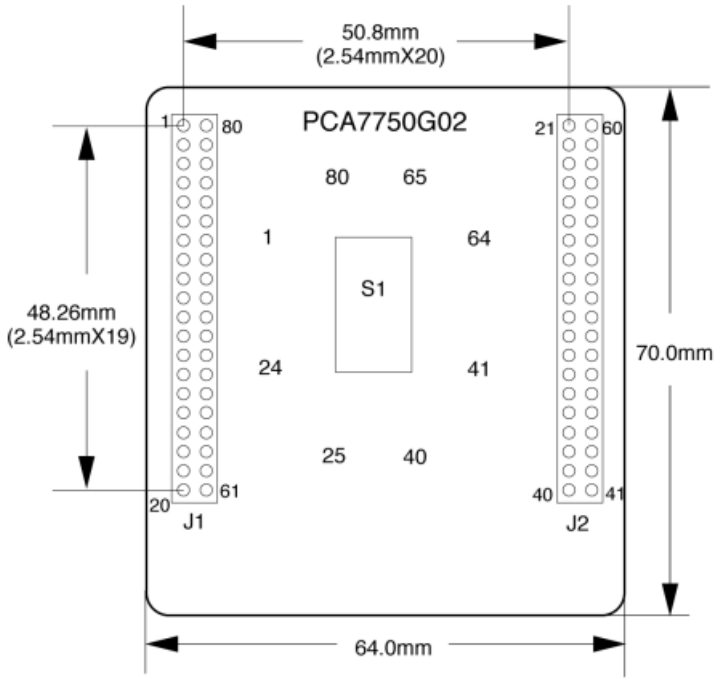
Application

Use the PCA7750G02 as a test board to connect an 80D0 MCU package to a standard pitch universal board. The PCA7750G02 has an 80-pin LCC socket mounted on the PCA7750G02-BARE.

Dimensions

70.0(D)×64.0(W)×8.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

PCA7750G02-BARE

Converter board from 80-pin 0.8mm-pitch QFP (80P6N-A) or LCC (80D0) to 40-pin DIL Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

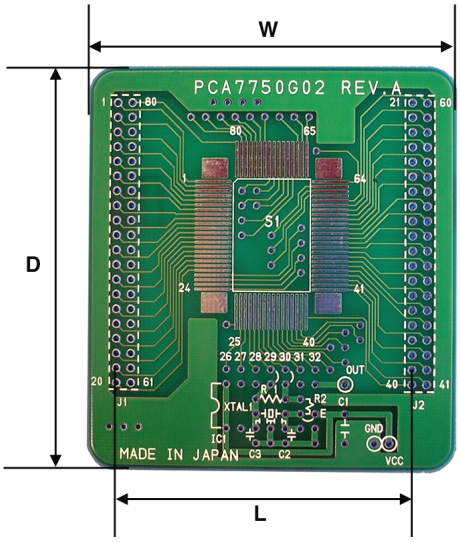
The PCA7750G02-BARE is a converter board that converts an 80-pin 0.8mm-pitch QFP (80P6N-A) or LCC (80D0) to the standard pitch. Pin No. 1 corresponds to pin No. 1.

Application

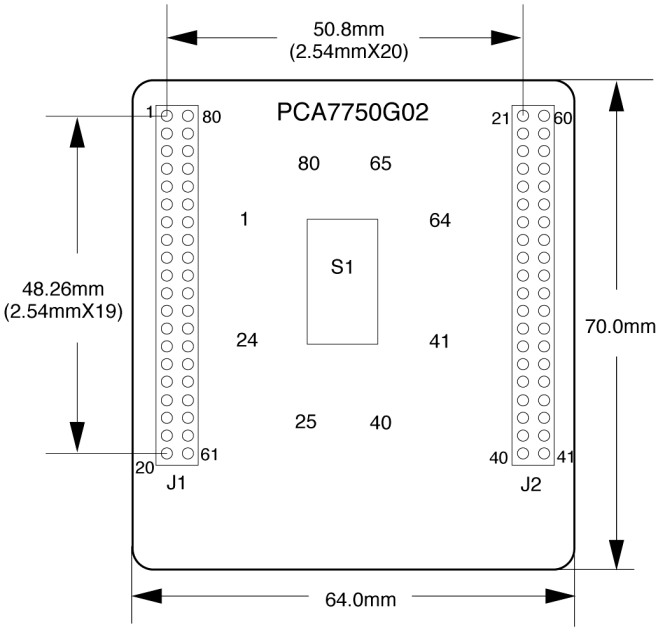
Use the PCA7750G02-BARE as a test board to connect an 80P6N-A or 80D0 MCU package to a standard pitch universal board. Since the PCA7750G02-BARE has a flat mounting pattern, users can mount a PROM MCU directly on it. An 80-pin LCC socket made by Yamaichi Electronics Co., Ltd. is required, when an MCU package is 80D0.

Dimensions

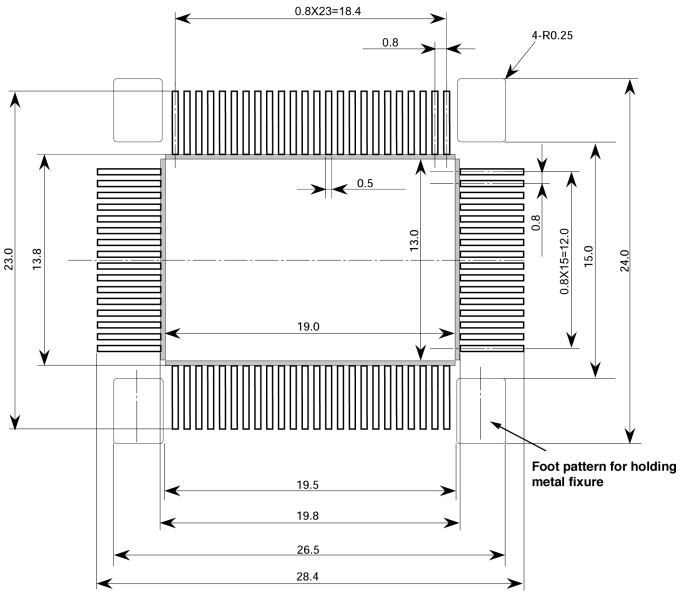
70.0(D)×64.0(W)mm
(L)=50.8(2.54×20)mm



Pin Layout



Foot Pattern Reference Dimensions



* When using the AXS4803M19 made by Matsushita Electric Works, Ltd., note that the contacts of the IC socket proper touch the PC board in the shaded section. Therefore, be especially careful with pattern wiring to ensure that other pins will not be shorted. (Through holes are not accepted.)
* Only when using the AXS4803M19 made by Matsushita Electric Works, Ltd., be sure to create foot patterns for the holding metal fixtures in four locations.

Manufactured Product

For 80D0: PCA7750G02

[Ordering Information] See Appendix H "Ordering Information".

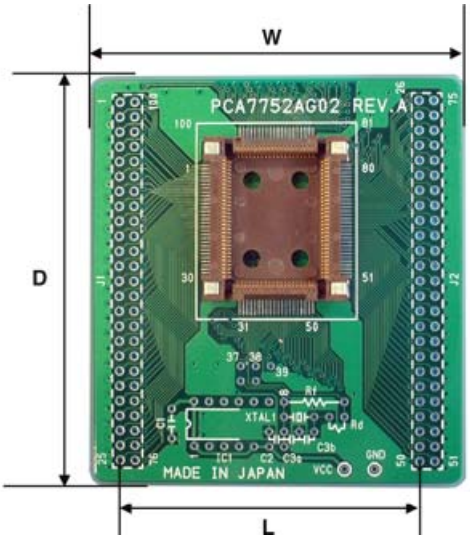
PCA7752AG02

Converter board from 100-pin 0.65mm-pitch LCC (100D0) to 50-pin DIL Standard Pitch (with LCC Socket)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA7752AG02 is a converter board that converts a 100-pin 0.65mm-pitch LCC (100D0) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



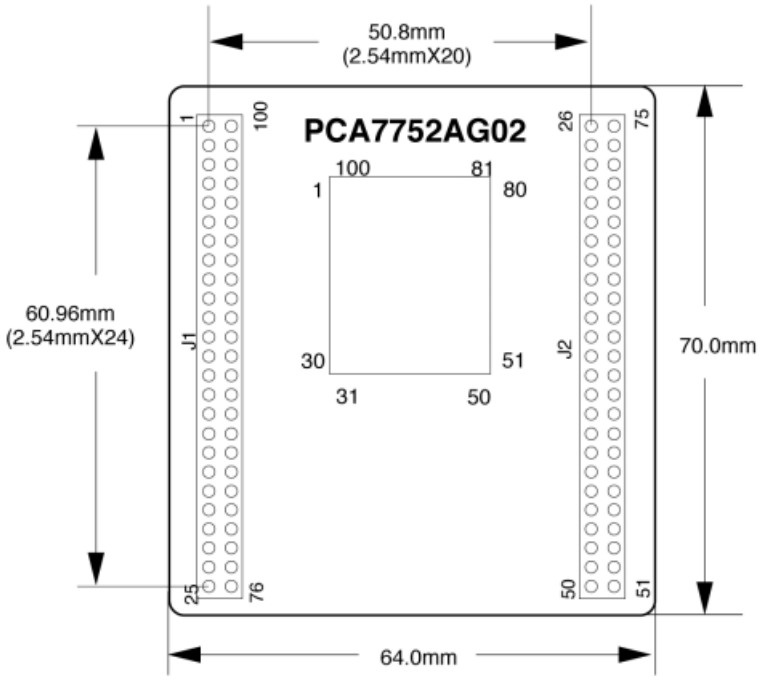
Application

Use the PCA7752A as a test board to connect a 100D0 MCU package to a standard pitch universal board. The PCA7752A has a 100-pin LCC socket mounted on the PCA7752AG02-BARE.

Dimensions

70.0(D)×64.0(W)×8.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

PCA7752AG02-BARE

Converter board from 100-pin 0.65mm-pitch QFP (100P6S-A) or LCC (100D0) to 50-pin DIL Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

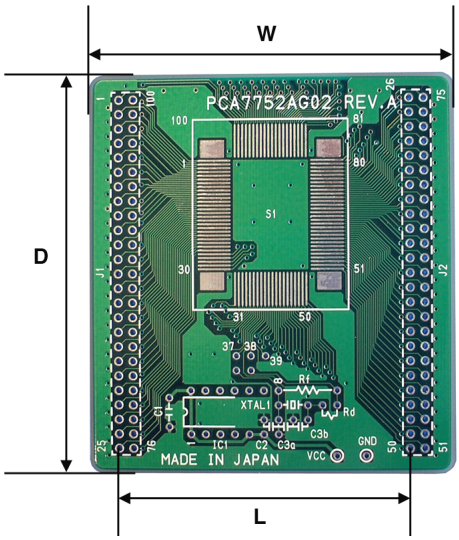
The PCA7752AG02-BARE is a converter board that converts a 100-pin 0.65mm-pitch QFP (100P6S-A) or LCC (100D0) to the standard pitch. Pin No. 1 corresponds to pin No. 1.

Application

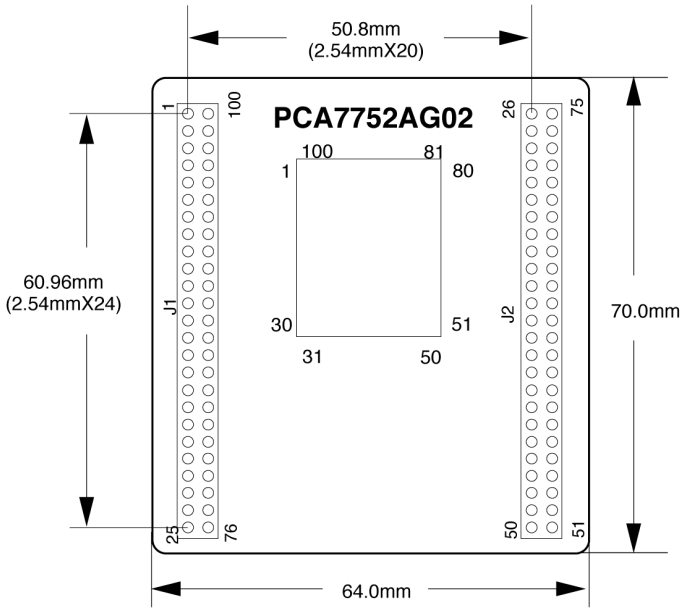
Use the PCA7752AG02-BARE as a test board to connect a 100P6S-A or 100D0 MCU package to a standard pitch universal board. Since the PCA7752A-BARE has a flat mounting pattern, users can mount a PROM MCU directly on it. A 100-pin LCC socket made by Yamaichi Electronics Co., Ltd. is required, when an MCU package is 100D0.

Dimensions

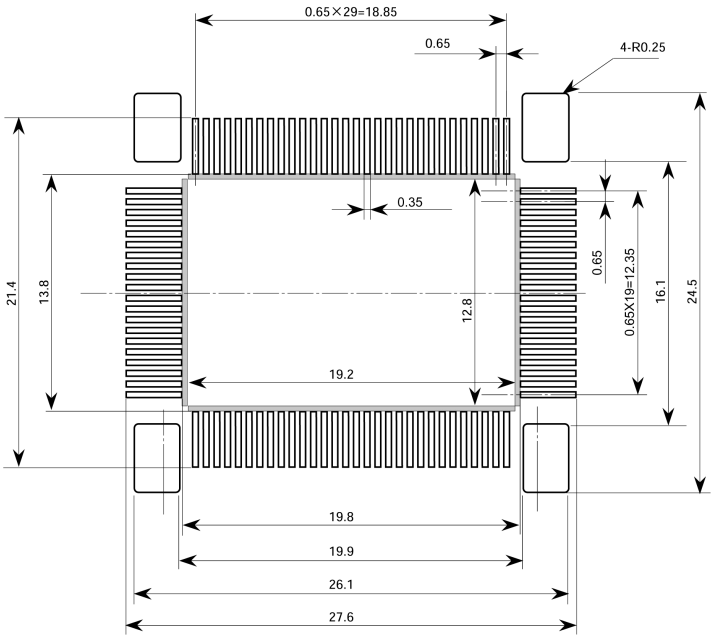
70.0(D)×64.0(W)mm
(L)=50.8(2.54×20)mm



Pin Layout



Foot Pattern Reference Dimensions



* When using the AXS4003M295C made by Matsushita Electric Works, Ltd., note that the contacts of the IC socket proper touch the PC board in the shaded section. Therefore, be especially careful with pattern wiring to ensure that other pins will not be shorted. (Through holes are not accepted.)
* Only when using the AXS4003M295C made by Matsushita Electric Works, Ltd. and IC61-1004-051 made by Yamaichi Electronics Co., Ltd., be sure to create foot patterns for the holding metal fixtures in four locations.

Manufactured Product

For 100P6S-A: PCA7752B
For 100D0: PCA7752AG02

[Ordering Information] See Appendix H "Ordering Information".

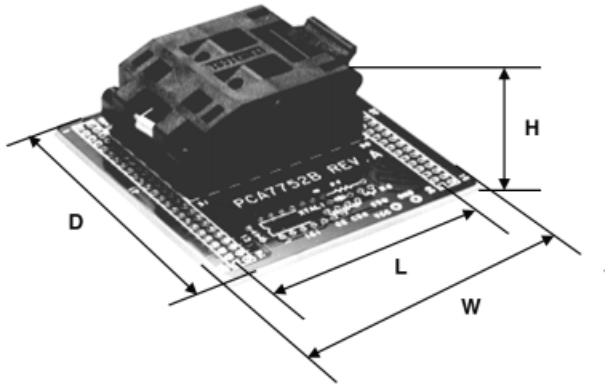
PCA7752B

Converter from 100-pin 0.65mm-pitch QFP (100P6S-A) to 50-pin DIL Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA7752B is a board that converts a 100-pin 0.65mm-pitch QFP (100P6S-A) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



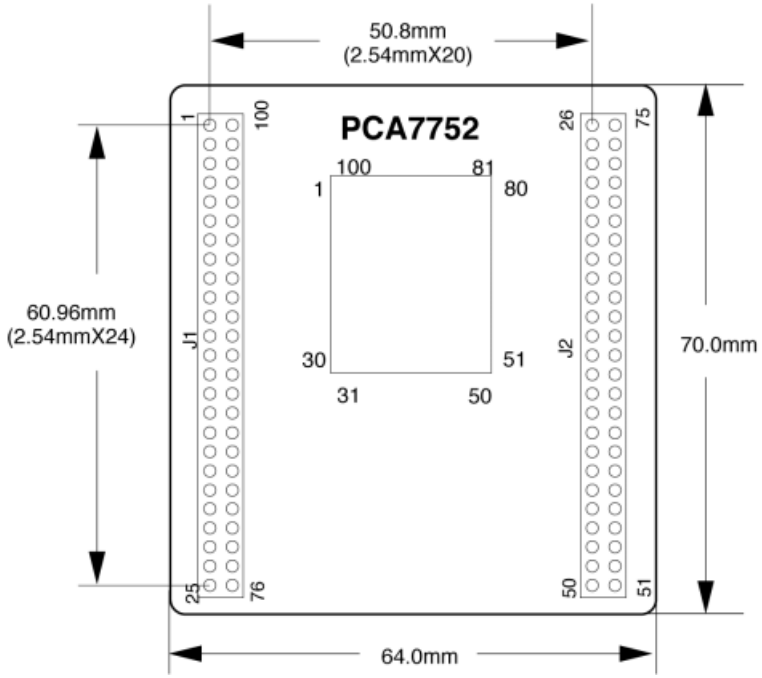
Application

Use the PCA7752B as a test board to connect a 100P6S-A MCU package to a standard pitch universal board. Since a 100P6S-A IC socket (IC51-1004-814-6 made by Yamaichi Electronics Co., Ltd.) is mounted on the PCA7752B, it is easy to replace MCUs.

Dimensions

70.0(D)×64.0(W)×21.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

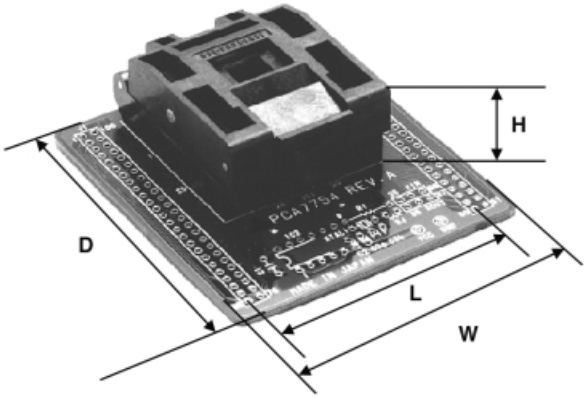
PCA7754

Converter from 100-pin 0.5mm-pitch QFP (100P6Q-A) to 50-pin DIL Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA7754 is a board that converts a 100-pin 0.5mm-pitch QFP (100P6Q-A to formerly 100P6D-A) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



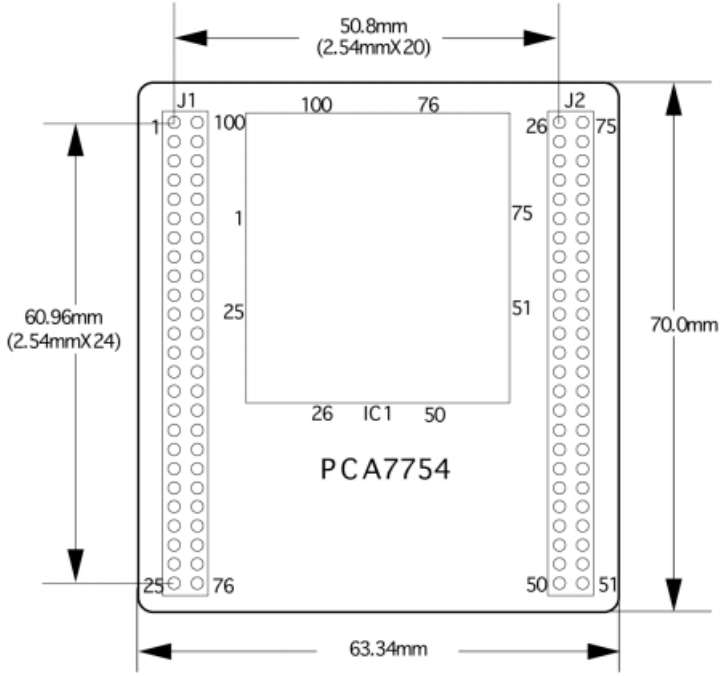
Application

Use the PCA7754 as a test board to connect a 100P6Q-A MCU package to a standard pitch universal board. The PCA7754 has a 100P6Q-A IC socket (IC51-1004-809 made by Yamaichi Electronics Co., Ltd.) mounted on its board.

Dimensions

70.0(D)×63.34(W)×17.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

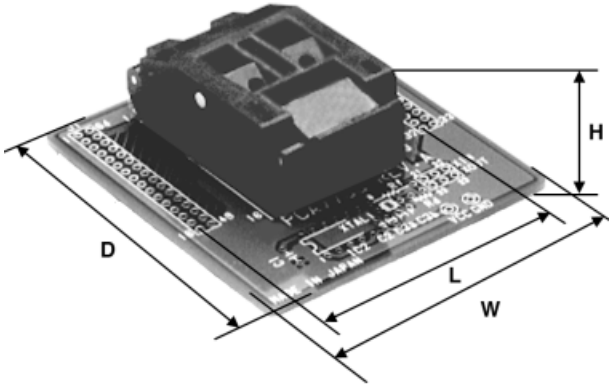
PCA7755A

Converter from 64-pin 0.8mm-pitch QFP (64P6N-A) to 32-pin DIL Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA7755A is a board that converts a 64-pin 0.8mm-pitch QFP (64P6N-A) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



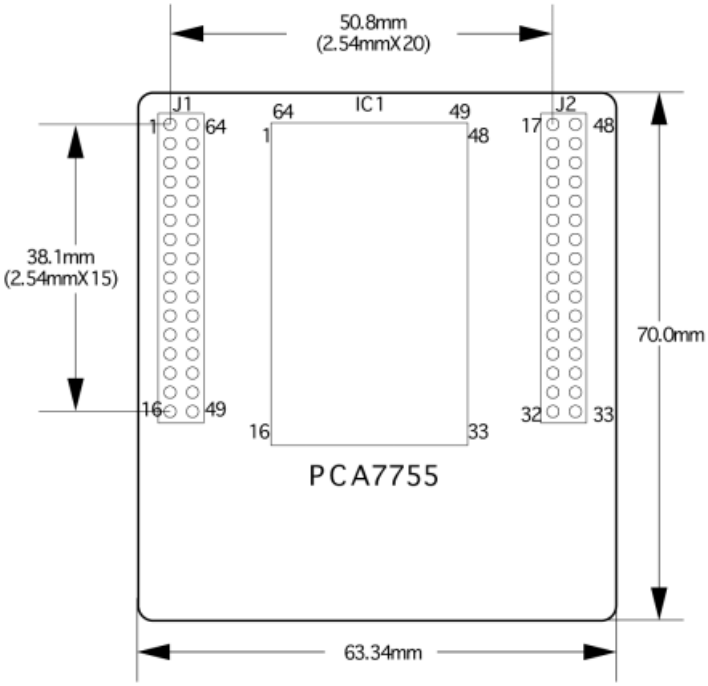
Application

Use the PCA7755A as a test board to connect a 64P6N-A MCU package to a standard pitch universal board. Since a 64P6N-A IC socket (IC51-824.KS-8095 made by Yamaichi Electronics Co., Ltd.) is mounted on the PCA7755A, it is easy to replace MCUs.

Dimensions

70.0(D)×63.34(W)×20.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

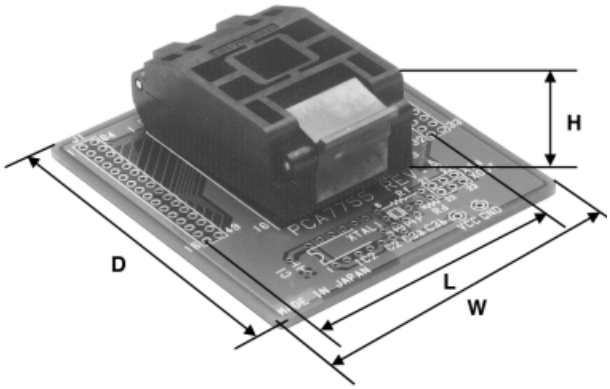
PCA7755B

Converter from 64-pin 0.8mm-pitch LCC (64D0) to 32-pin DIL Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA7755B is a board that converts a 64-pin 0.8mm-pitch LCC (64D0) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



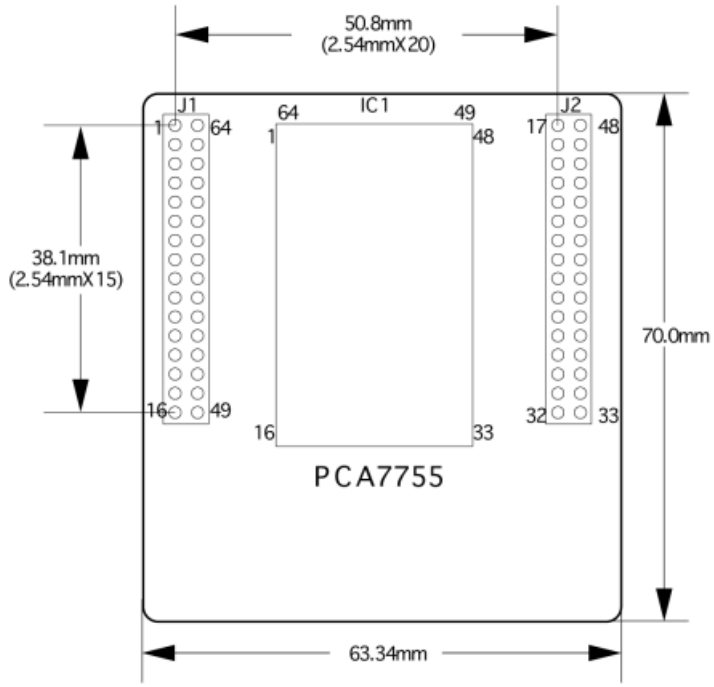
Application

Use the PCA7755B as a test board to connect a 64D0 MCU package to a standard pitch universal board. Since a 64D0 IC socket (IC51-0644-1329 made by Yamaichi Electronics Co., Ltd.) is mounted on the PCA7755B, it is easy to replace MCUs.

Dimensions

70.0(D)×63.34(W)×20.0(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

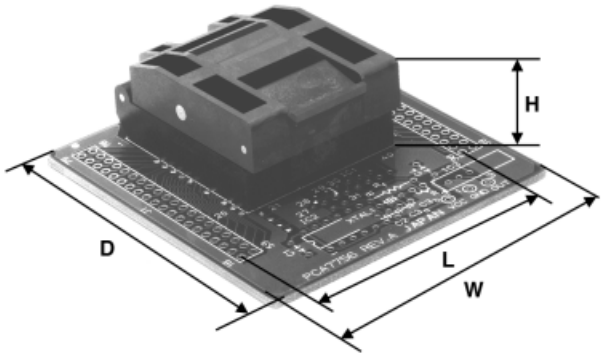
PCA7756

Converter from 80-pin 0.5mm-pitch QFP (80P6Q-A) to 40-pin DIL Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The PCA7756 is a board that converts an 80-pin 0.5mm-pitch QFP (80P6Q-A to formerly 80P6D-A) to the standard pitch. Pin No. 1 corresponds to pin No. 1.



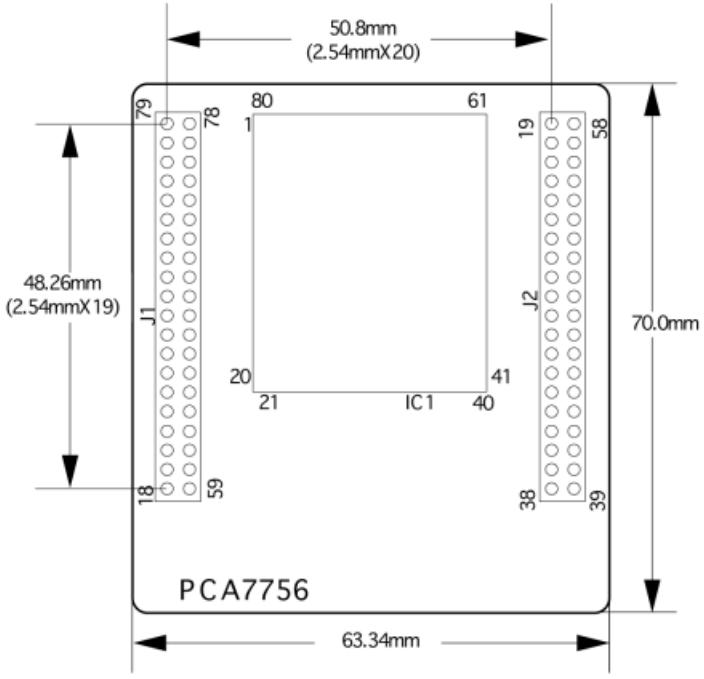
Application

Use the PCA7756 as a test board to connect an 80P6Q-A MCU package to a standard pitch universal board. Since an 80P6Q-A IC socket (IC51-0804-808 made by Yamaichi Electronics Co., Ltd.) is mounted on the PCA7756, it is easy to replace MCUs.

Dimensions

770.0(D)×63.34(W)×20.2(H)mm
(L)=50.8(2.54×20)mm

Pin Layout



* Pins and other parts needed to connect the standard pitch converter are not included with the product.

[Ordering Information] See Appendix H "Ordering Information".

Chapter 4

Sealed Conversion Board

Quick Guide to Standard Pitch Conversion Seal Boards

Renesas MCU or IC socket package	Seal board type name
64-pin 0.8mm-pitch QFP (64P6N-A)	SEAL64FP
64-pin 0.8mm-pitch LCC (64D0)	
80-pin 0.8mm-pitch QFP (80P6N-A, 80P6-B)	SEAL80FP
80-pin 0.8mm-pitch LCC (80D0)	SEAL80FP SEAL80FPS
100-pin 0.65mm-pitch QFP (100P6S-A)	SEAL100FP
100-pin 0.65mm-pitch LCC (100D0)	

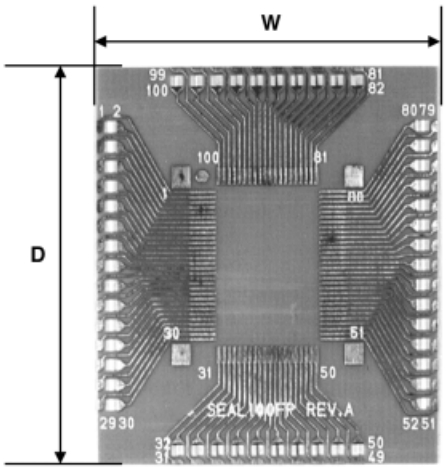
SEAL100FP

Sealed Conversion Board for Converting from 100-pin 0.65mm-pitch QFP (100P6S-A) or LCC (100D0) to 100-pin Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The SEAL100FP is a board for converting the foot pattern of an MCU with a 100-pin 0.65mm-pitch QFP (100P6S-A) or LCC (100D0) package to the standard pitch. Also, this board converts a 100P6S-A or 100D0 IC socket foot pattern to the standard pitch.



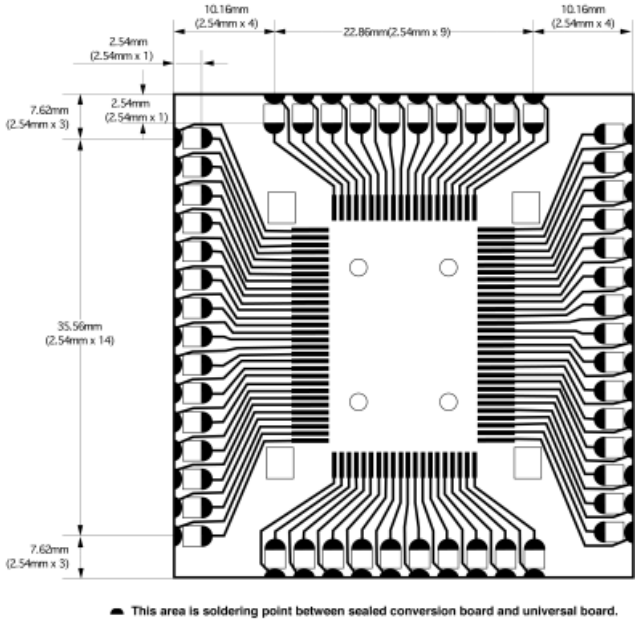
Application

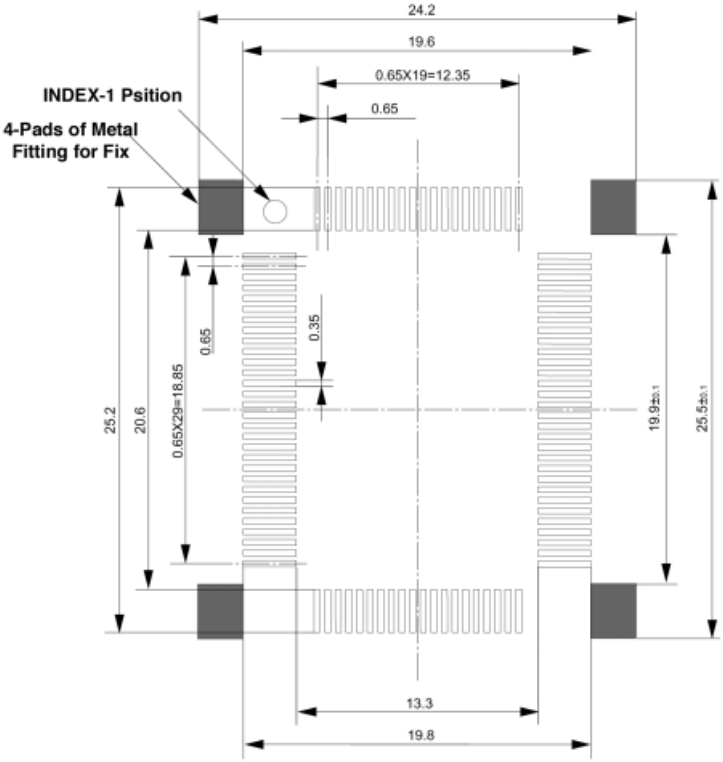
The SEAL100FP is a standard pitch converter that is sealed on its reverse side. It is used to connect an MCU or IC socket with a 100P6S-A or 100D0 package to a standard-pitch universal board, etc. Since there is a mounting pattern for flat packages on the board, it allows mask-ROM or PROM MCUs or 100-pin QFP/LCC IC sockets to be mounted in place directly.

Dimensions

50.80(D)×43.18(W)×0.17(T)mm

Foot Pattern Reference Dimensions





[Ordering Information] See Appendix H "Ordering Information".

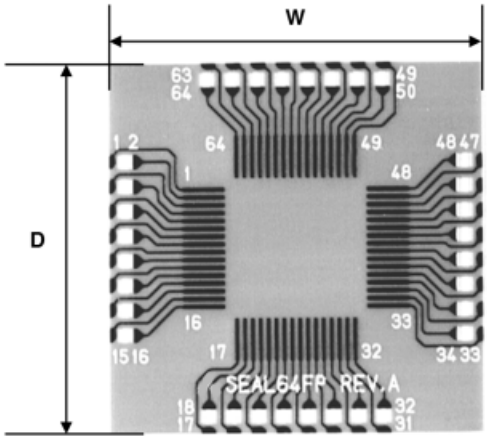
SEAL64FP

Sealed Conversion Board for Converting from 64-pin 0.8mm-pitch QFP (64P6N-A) or LCC (64D0) to 64-pin Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The SEAL64FP is a board for converting the foot pattern of an MCU with a 64-pin 0.8mm-pitch QFP (64P6N-A) or LCC (64D0) package to the standard pitch. Also, this board converts a 64P6N-A or 64D0 IC socket foot pattern to the standard pitch.



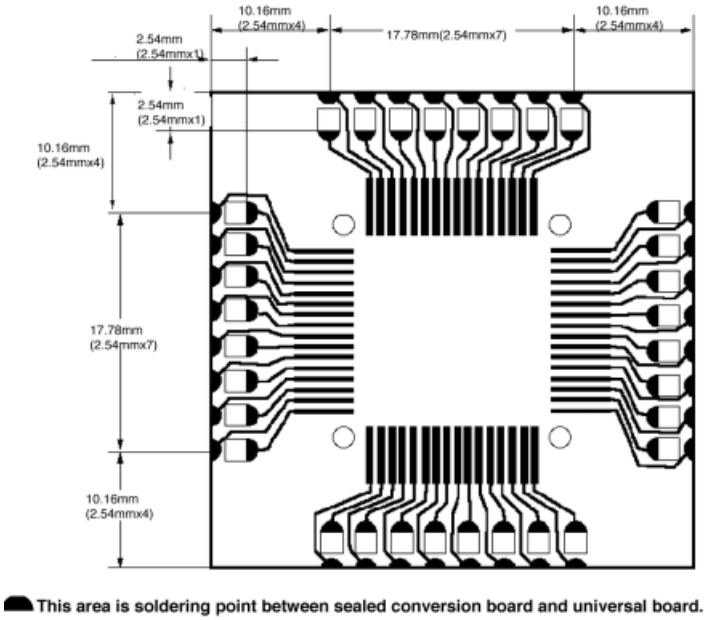
Application

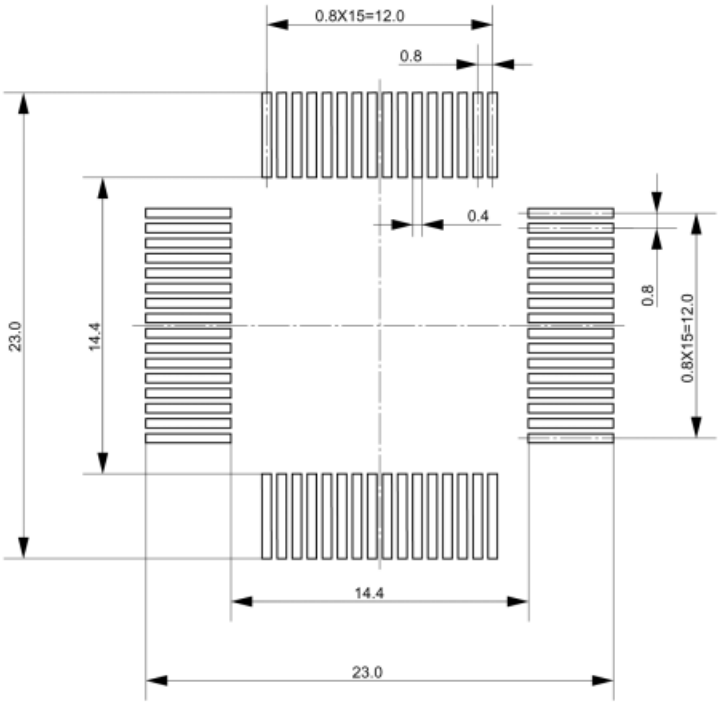
The SEAL64FP is a standard pitch converter that is sealed on its reverse side. It is used to connect an MCU or IC socket with a 64P6N-A or 64D0 package to a standard-pitch universal board, etc. Since there is a mounting pattern for flat packages on the board, it allows mask-ROM or PROM MCUs or 64-pin QFP/LCC IC sockets to be mounted in place directly.

Dimensions

38.10(D)×38.10(W)×0.17(T)mm

Foot Pattern Reference Dimensions





[Ordering Information] See Appendix H "Ordering Information".

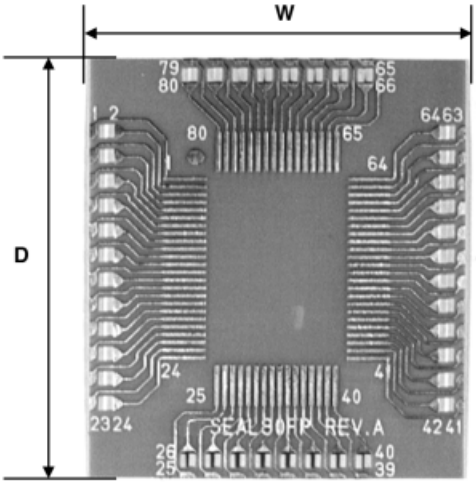
SEAL80FP

Sealed Conversion Board for Converting from 80-pin 0.8mm-pitch QFP (80P6-B or 80P6N-A) or LCC (80D0) to 80-pin Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The SEAL80FP is a board for converting the foot pattern of an MCU with an 80-pin 0.8mm-pitch QFP (80P6-B or 80P6N-A) or LCC (80D0) package to the standard pitch. Also, this board converts an 80P6-B, 80P6N-A or 80D0 IC socket foot pattern to the standard pitch.



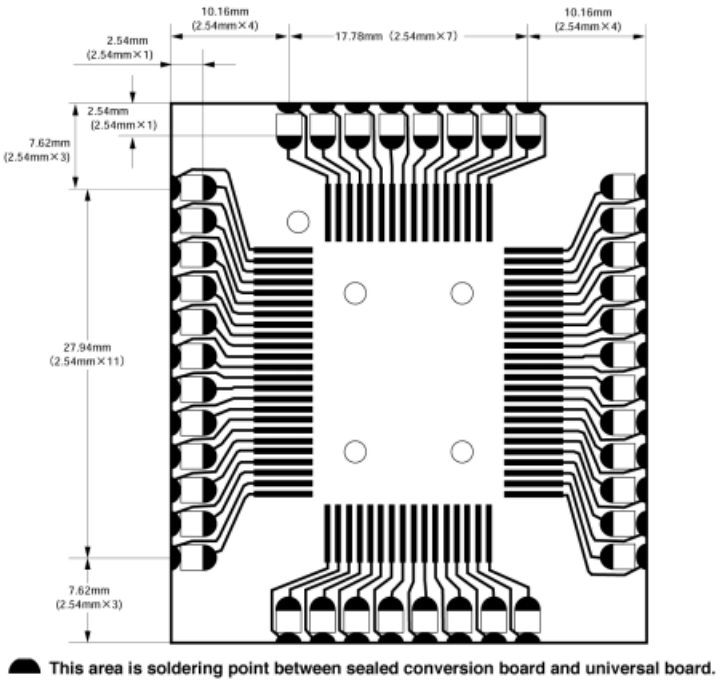
Application

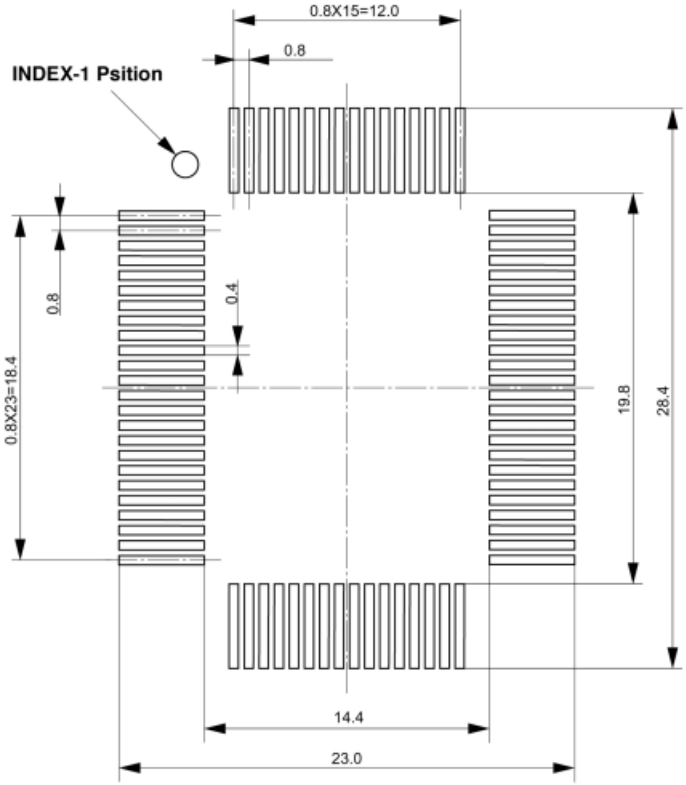
The SEAL80FP is a standard pitch converter that is sealed on its reverse side. It is used to connect an MCU or IC socket with an 80P6-B, 80P6N-A or 80D0 package to a standard pitch universal board, etc. Since there is a mounting pattern for flat packages on the board, it allows mask-ROM or PROM MCUs or 80-pin QFP/LCC IC sockets to be mounted in place directly.

Dimensions

43.18(D)×38.10(W)×0.17(T)mm

Foot Pattern Reference Dimensions





[Ordering Information] See Appendix H "Ordering Information".

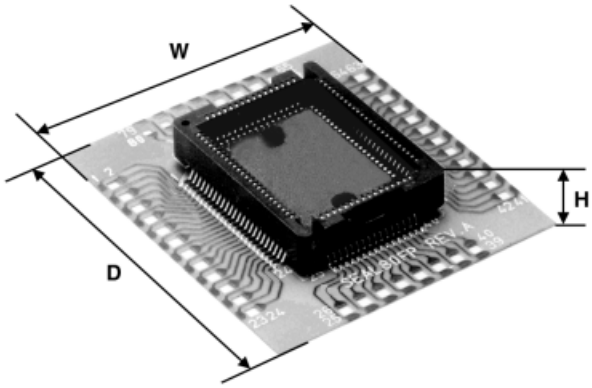
SEAL80FPS

Sealed Conversion Board for Converting from 80-pin 0.8mm-pitch LCC (80D0) to 80-pin Standard Pitch

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The SEAL80FPS is a board for converting the foot pattern of an MCU with an 80-pin 0.8mm-pitch LCC (80D0) package to the standard pitch.



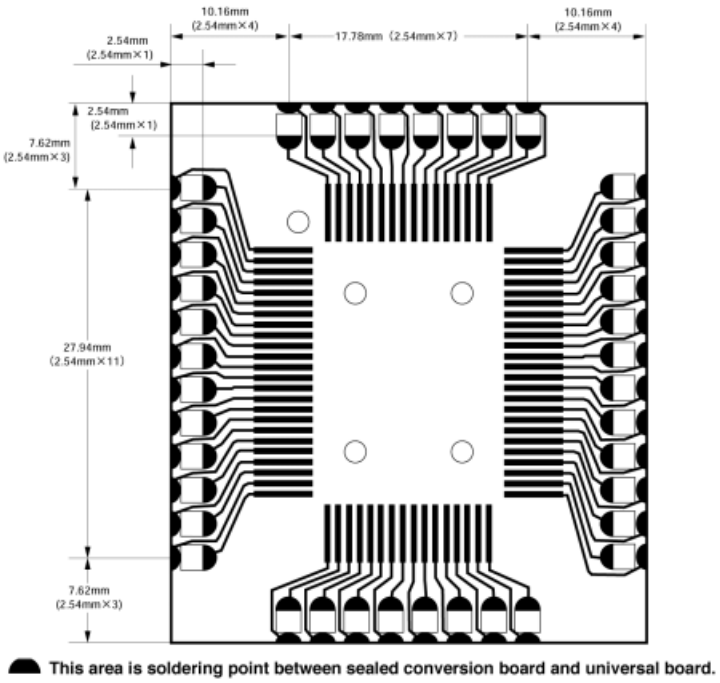
Application

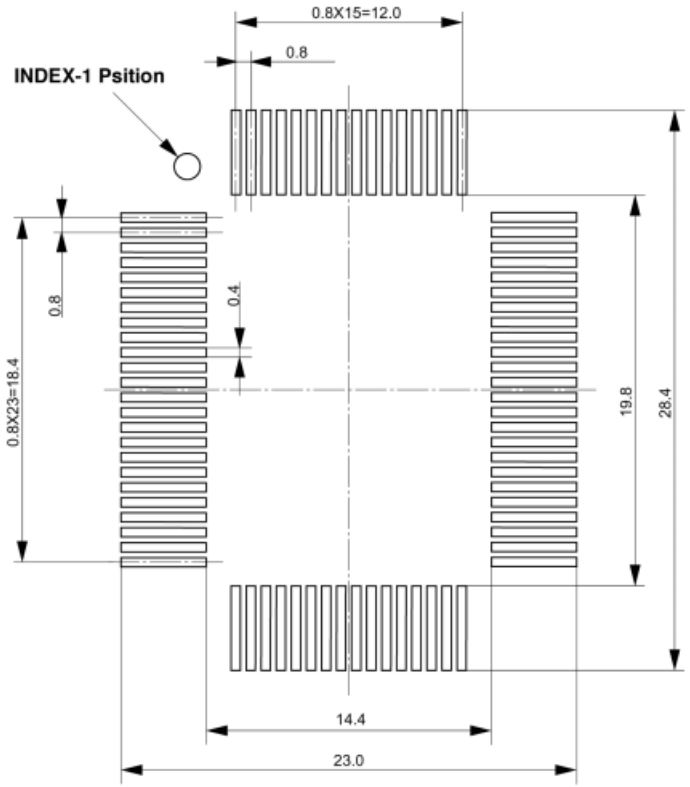
The SEAL80FPS is a standard pitch converter that is sealed on its reverse side. It is used to connect an MCU with an 80D0 package to a standard pitch universal board, etc. The SEAL80FPS has an LCC socket (IC61-0804-046 made by Yamaichi Electronics Co., Ltd.).

Dimensions

43.18(D)×38.10(W)×6.37(H)mm

Foot Pattern Reference Dimensions





[Ordering Information] See Appendix H "Ordering Information".

Chapter 5

Temporary Target Board

Quick Guide to Temporary Target Boards Classified by MCU

List of emulator MCUs and Temporary Target Boards for 38000 Series

MCU Group	Emulator MCU	Temporary target board
3800(Discontinued product)	M38007RSS	M38007T-ADS
3802(Discontinued product)	M38027RSS	
3803	M38049RLSS	
3804		
3806(Discontinued product)	M38067RFS	M38067T-ADF
3807(Discontinued product)	M38078RFS	
3811(Discontinued product)	M38117RSS	M38007T-ADS
3812	M38127RSS	
3817(Discontinued product)	M38177RFS	M38067T-ADF
3818(Discontinued product)	M38187RFS	M38187T-ADF
3819(Discontinued product)	M38197RFS	
3820(Discontinued product)	M38207RFS	M38067T-ADF
3822	M38227RFS	
3825(Discontinued product)	M38257RFS	M38187T-ADF
3826	M38267RLFS	
3827(Discontinued product)	M38277RFS	
3850	M38517RSS/M38507ARLSS*	M38517T-ADS
3851		
3880(Discontinued product)	M38807RSS	M38007T-ADS
3881(Discontinued product)	M38817RSS	
3886	M38867RFS	M38067T-ADF
3888(Discontinued product)	M38887RSS	M38007T-ADS
38C2	M38C29RLFS	M38C29T-ADF
38C8	M38C89RLFS	M38C89T-ADF
38K0	M38K09RFS	M38K29T-ADF
38K2	M38K29RFS	

*.M38507ARLSS is necessary to debug "A specification" MCUs of the 3850 group.M38517RSS is necessary to do "a standard specification" and "H specification" MCUs of the 3850 group.

List of emulator MCUs and Temporary Target Boards for 740 Series

MCU Group	Emulator MCU	Temporary target board
7531(Discontinued product)	M37531RSS	M37531T-ADS
7532(Discontinued product)	M37532RSS	
7534	M37534RSS	
7536(Discontinued product)	M37536RSS	
7540	M37540RSS	
7542	M37542RSS	
7544	M37544RSS	

M37450T-ADF

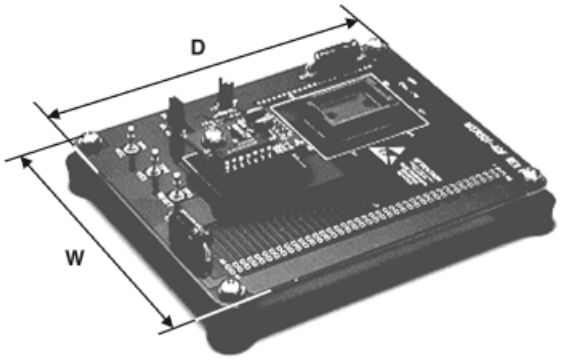
Temporary Target Board for M37451RFS*1

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M37450T-ADF is a temporary target board for PC4701 or PC4600 emulator systems designed for use with the M37451RFS*1 emulator MCU. The M37450T-ADF provides the power supply, clock signal, RESET signal, CNVss signal and other minimum essential signals for the emulator MCU. One pin number of the standard pitch hole (80-pin) corresponds to one pin number of MCU.

*1:Discontinued product



Application

Use the M37450T-ADF only to debug programs using an emulator but no target.

Dimensions

120.0(D)×100.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

M37450T-ADS

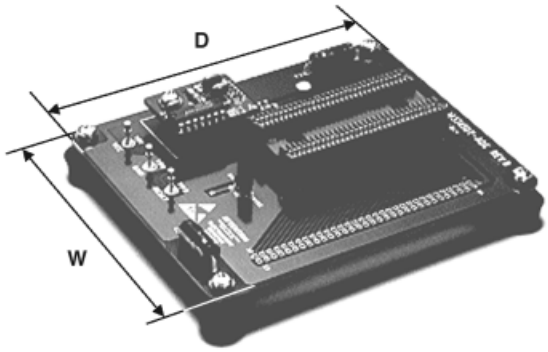
Temporary Target Board for M37451RSS*1

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M37450T-ADS is a temporary target board for PC4701 or PC4600 emulator systems designed for use with the M37451RSS*1 emulator MCU. The M37450T-ADS provides the power supply, clock signal, RESET signal, CNVss signal, and other minimum essential signals for the emulator MCU. One pin number of the standard pitch hole (64-pin) corresponds to one pin number of MCU.

*1:Discontinued product



Application

Use the M37450T-ADS only to debug programs using an emulator but no target.

Dimensions

120.0(D)×100.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

M37531T-ADS

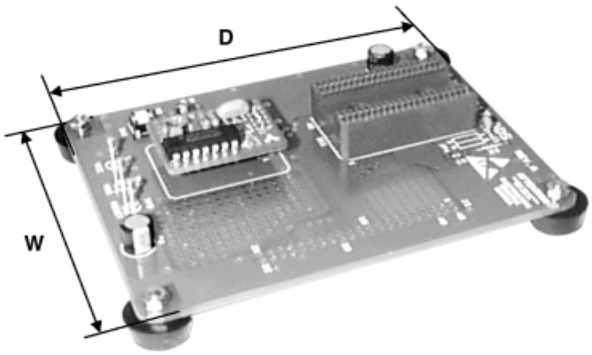
Temporary Target Board for M37531RSS*1, M37532RSS*1, M37534RSS, M37536RSS*1, M37540RSS, M37542RSS and M37544RSS

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M37531T-ADS is a temporary target board for PC4701 emulator systems designed for use with the M37531RSS*1, M37532RSS*1, MM37534RSS, M37536RSS*1, M37540RSS, M37542RSS and M37544RSS emulator MCU. The M37531T-ADS provides the power supply, clock signal, RESET signal, CNVss signal, and other minimum essential signals for the emulator MCU. One pin number of the standard pitch hole (80-pin) corresponds to one pin number of MCU.

*1:Discontinued product



Application

Use the M37531T-ADS only to debug programs using an emulator but no target.

Dimensions

115.0(D)×90.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

M38007T-ADS

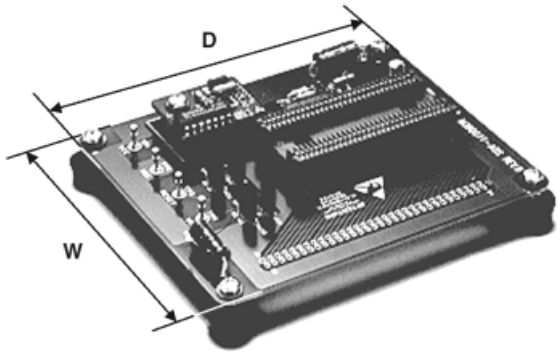
Temporary Target Board for M38007RSS*1, M38027RSS*1, M38049RLSS, M38117RSS*1, M38127RSS, M38807RSS*1, M38817RSS*1 and M38887RSS*1

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M38007T-ADS is a temporary target board for PC4701 or PC4600 emulator systems designed for use with the M38007RSS*1, M38027RSS*1, M38049RLSS, M38117RSS*1, M38127RSS, M38807RSS*1, M38817RSS*1 and M38887RSS*1 emulator MCU. The M38007T-ADS provides the power supply, clock signal, RESET signal, CNVss signal and other minimum essential signals for the emulator MCU. One pin number of the standard pitch hole (64-pin) corresponds to one pin number of MCU.

*1:Discontinued product



Application

Use the M38007T-ADS only to debug programs using an emulator but no target.

Dimensions

120.0(D)×100.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

M38067T-ADF

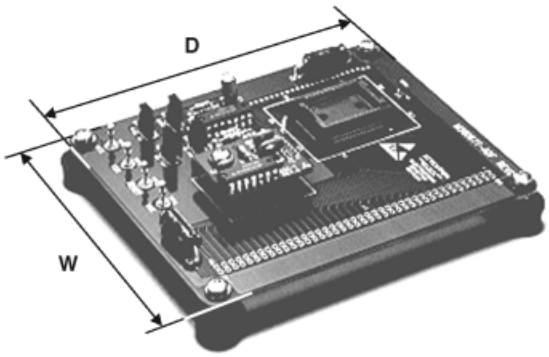
Temporary Target Board for M38067RFS*1, M38078RFS*1, M38177RFS*1, M38207RFS*1, M38227RFS and M38867RFS

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M38067T-ADF is a temporary target board for PC4701 or PC4600 emulator systems designed for use with the M38067RFS*1, M38078RFS*1, M38177RFS*1, M38207RFS*1, M38227RFS and M38867RFS emulator MCU. The M38067T-ADF provides the power supply, clock signal, RESET signal, CNVss signal, and other minimum essential signals for the emulator MCU. One pin number of the standard pitch hole (80-pin) corresponds to one pin number of MCU.

*1:Discontinued product



Application

Use the M38067T-ADF only to debug programs using an emulator but no target.

Dimensions

120.0(D)×100.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

M38187T-ADF

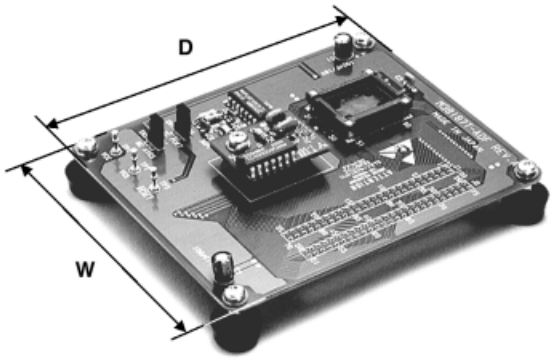
Temporary Target Board for M38187RFS*1, M38197RFS*1, M38257RFS*1, M38267RLFS and M38277RFS*1

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M38187T-ADF is a temporary target board for PC4701 or PC4600 emulator systems designed for use with the M38187RFS*1, M38197RFS*1, M38257RFS*1, M38267RLFS and M38277RFS*1 emulator MCU. The M38187T-ADF provides the power supply, clock signal, RESET signal, CNVss signal, and other minimum essential signals for the emulator MCU. One pin number of the standard pitch hole (100-pin) corresponds to one pin number of MCU.

*1:Discontinued product



Application

Use the M38187T-ADF only to debug programs using an emulator but no target.

Dimensions

120.0(D)×100.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

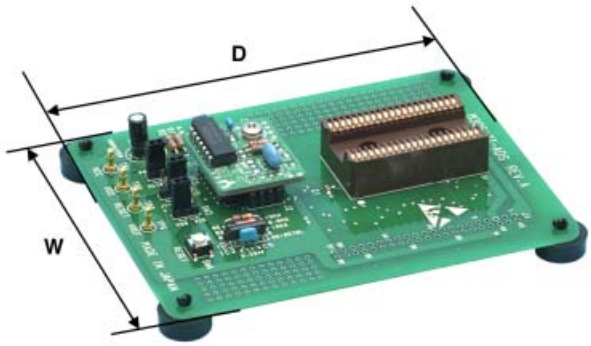
M38517T-ADS

Temporary Target Board for M38517RSS and M38507ARLSS

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M38517T-ADS is a temporary target board for PC4701 emulator systems designed for use with the M38517RSS and M38507ARLSS emulator MCUs. The M38517T-ADS provides the power supply, clock signal, RESET signal, CNVss signal, and other minimum essential signals for the emulator MCU. One pin number of the standard 2.54mm-pitch hole (42-pin) corresponds to one pin number of MCU.



Application

Use the M38517T-ADS only to debug programs using an emulator but no target.

Dimensions

115.0(D)×90.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

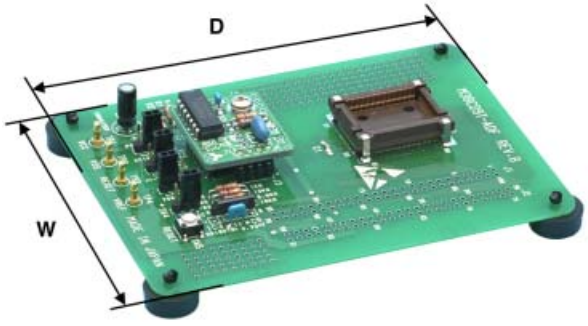
M38C29T-ADF

Temporary Target Board for M38C29RLFS

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M38C29T-ADF is a temporary target board for PC4701 emulator systems designed for use with the M38C29RLFS emulator MCU. The M38C29T-ADF provides the power supply, clock signal, RESET signal, CNVss signal, and other minimum essential signals for the emulator MCU. One pin number of the standard pitch hole (100-pin) corresponds to one pin number of MCU.



Application

Use the M38C29T-ADF only to debug programs using an emulator but no target.

Dimensions

115.0(D)×90.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

M38C89T-ADF

Temporary Target Board for M38C89RLFS

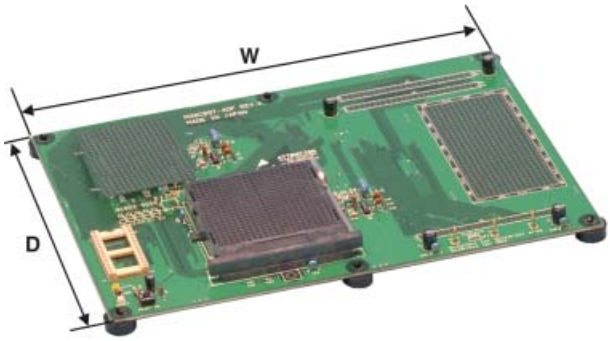
REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M38C89T-ADF is a temporary target board for PC4701 emulator systems designed for use with the M38C89RLFS emulator MCU. The M38C89T-ADF provides the power supply, clock signal, RESET signal, and other minimum essential signals for the emulator MCU. Peripheral circuit pins of the MCU are output to the standard pitch hole.

This board has not only a socket for mounting an emulator MCU but also the 2 foot patterns below.

- Foot pattern for M38C89MF-xxxFP/M38C89EFFP (IC socket and parts for peripheral circuits are not mounted.)
- Foot pattern for LCD bias (Parts such as a capacitor for an LCD bias circuit are not mounted.)



Application

The M38C89T-ADF is a temporary target board for 38C8 group. You connect for target system to 2.54mm-pitch connector on M38C89T-ADF when you debug M38C8 group MCUs. Use the M38C89T-ADF only to develop programs using an emulator but no target system because the M38C89T-ADF provides the power supply, clock signal, RESET signal, and other minimum essential signals for the emulator MCU.

By mounting a socket (IC51-1444-1354-18 made by Yamaichi Electronics Co., Ltd.) for M38C89MF-xxxFP/M38C89EFFP and a part for oscillation circuit, the M38C89T-ADF can be used to evaluate the program of the M38C89MF-xxxFP/M38C89EFFP.

Dimensions

160.0(D)×220.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

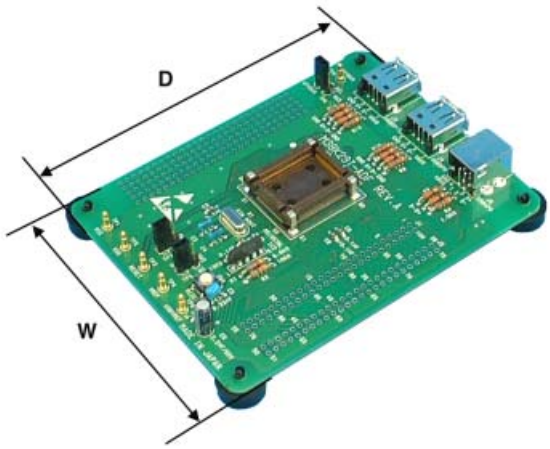
M38K29T-ADF

Temporary Target Board for M38K09RFS, M38K29RFS

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The M38K29T-ADF is a temporary target board for PC4701 emulator systems designed for use with the M38K09RFS or M38K29RFS emulator MCU. The M38K29T-ADF provides the power supply, clock signal, RESET signal, CNVss signal, and other minimum essential signals for the emulator MCU. One pin number of the standard pitch hole (100-pin) corresponds to one pin number of MCU. This board has the pattern of an simplified USB peripheral circuit for evaluation the USB function of MCU.



Application

Use the M38K29T-ADF only to debug programs using an emulator but no target.

Dimensions

115.0(D)×90.0(W)mm

[Ordering Information] See Appendix H "Ordering Information".

Chapter 6

Oscillator Board

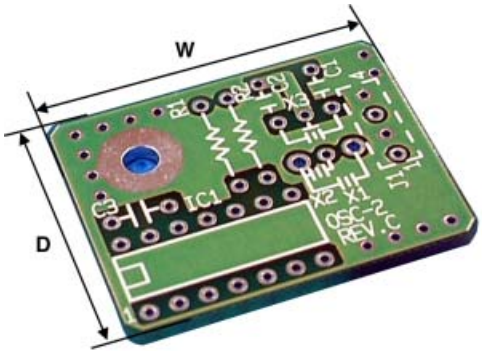
OSC-2

Oscillator Board (Dumping Resistor Mounting Type)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

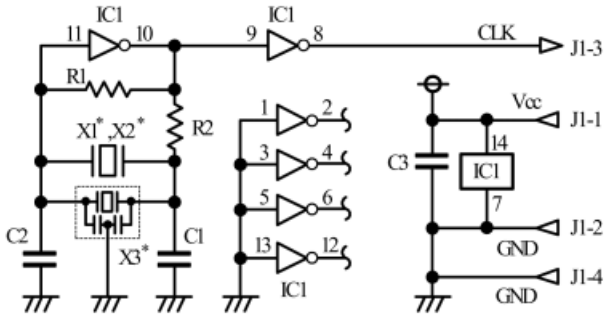
The OSC-2 is a clock oscillator board that is fitted on an emulation pod or a temporary target board, etc. Users can mount the desired oscillation module on its board.



Dimensions

25.0(D)×32.0(W)mm

Circuit Diagram



*. X1:5.08-mm-pitch 2-pin oscillator
X2:2.54-mm-pitch 2-pin oscillator
X3:2.54-mm-pitch 3-pin oscillator

IC1:Inverter (Unbuffer)

[Ordering Information] See Appendix H "Ordering Information".

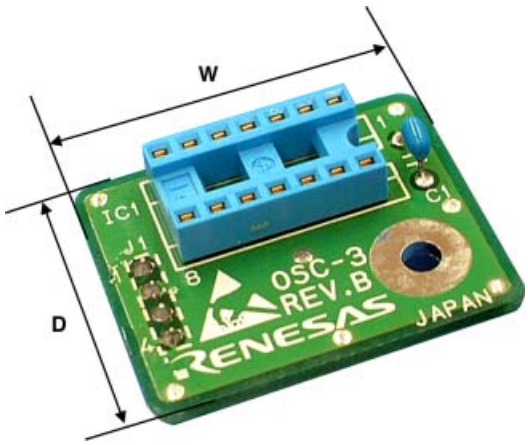
OSC-3

Oscillator Board (Oscillation Module Mounting Type)

REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The OSC-3 is a clock oscillator board that is fitted on an emulation pod or a temporary target board, etc. Users can mount the desired oscillation module on its board.



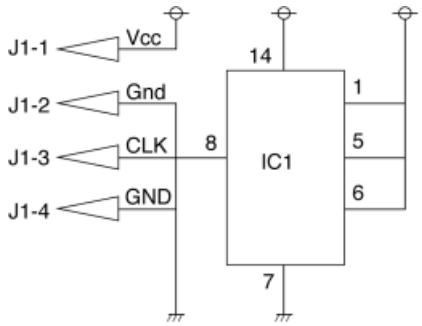
Suitable Oscillation Module

We recommend SG51P series oscillation module made by SEIKO EPSON CORPORATION. For inquiries about more information of SG51P series, contact SEIKO EPSON CORPORATION.

Dimensions

25.0(D)×31.0(W)mm

Circuit Diagram



[Ordering Information] See Appendix H "Ordering Information".

OSC-4

Oscillator Board (8 and 16MHz Selection Type)

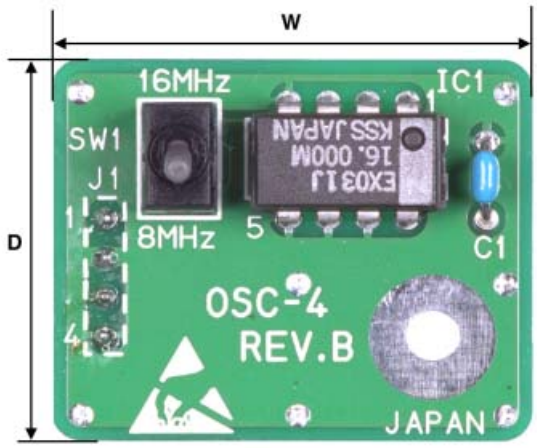
REJ01J0001-0100Z
Rev.1.00
2004.04.16

Function

The OSC-4 is a clock oscillator board that is fitted on an emulation pod or a temporary target board, etc. (already assembled). It has two oscillation frequencies (8 and 16MHz) that can be selected by a switch.

Dimensions

25.0(D)×31.0(W)mm



[Ordering Information] See Appendix H "Ordering Information".

Chapter 7

LCC Socket

IC61-0644-052

REJ01J0001-0100Z
Rev.1.00
2004.04.16

64-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.

Function

The IC61-0644-052 is an IC socket that can be soldered to a foot pattern for a 64-pin 0.8mm-pitch QFP (64P6N-A) package MCU (manually soldering type).

Application

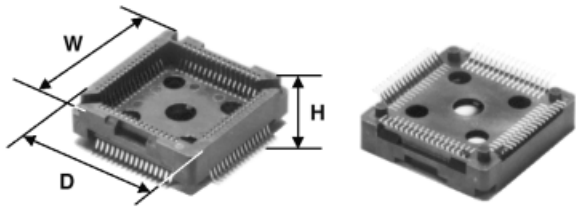
Using this IC socket, developers can connect a 64-pin 0.8 mm-pitch LCC (64D0) package MCU or an emulator probe to the foot pattern on a target that is prepared for a 64P6N-A package MCU. The foot pattern's land length needed to fit the IC socket is longer than that of the 64P6N-A.

Dimensions

20.8(D)×20.0(W)×6.2(H)mm

Foot Pattern Reference Dimensions

See Appendix A "Reference Dimensional Drawing for Common 64-pin 0.8mm-pitch QFP Foot Pattern".



*To purchase the IC61-TOOL-4 pull-out tool which detaches an MCU on IC61 Series, please contact Yamaichi Elect Co., LTD.

[Ordering Information] See Appendix H "Ordering Information".

IC61-0644-053

REJ01J0001-0100Z
Rev.1.00
2004.04.16

64-pin LCC Socket (Mounting Type) Made by Yamaichi Electronics Co., Ltd.

Function

The IC61-0644-053 is an IC socket that can be soldered to a foot pattern for a 64-pin 0.8mm-pitch QFP (64P6N-A) package MCU (mounting type).

Application

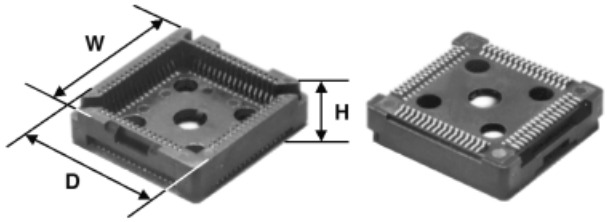
Using this IC socket, developers can connect a 64-pin 0.8 mm-pitch LCC (64D0) package MCU or an emulator probe to the foot pattern on a target that is prepared for a 64P6N-A package MCU. The foot pattern's land length needed to fit the IC socket is equal to that of 64P6N-A.

Dimensions

20.8(D)×20.0(W)×5.3(H)mm

Foot Pattern Reference Dimensions

See Appendix A "Reference Dimensional Drawing for Common 64-pin 0.8mm-pitch QFP Foot Pattern".



*To purchase the IC61-TOOL-4 pull-out tool which detaches an MCU on IC61 Series, please contact Yamaichi Elect Co., LTD.

[Ordering Information] See Appendix H "Ordering Information".

IC61-0644-088

REJ01J0001-0100Z
Rev.1.00
2004.04.16

64-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.

Function

The IC61-0644-088 is an IC socket that can be soldered to a foot pattern for an 64-pin 0.8mm-pitch QFP (64P6N-A) package MCU (manually soldering type).

Application

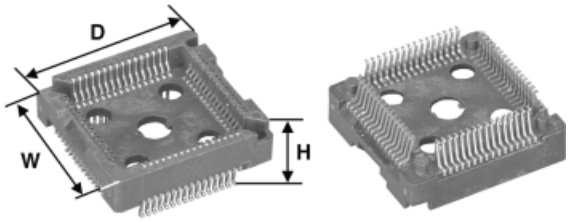
Using this IC socket, developers can connect a 64-pin 0.8 mm-pitch LCC (64D0) package MCU or an emulator probe to the foot pattern on a target that is prepared for an 64P6N-A package MCU. The foot pattern's land length needed to fit the IC socket is equal to that of the 64P6N-A.

Dimensions

20.8(D)×20.0(W)×8.3(H)mm

Foot Pattern Reference Dimensions

See Appendix A "Reference Dimensional Drawing for Common 64-pin 0.8mm-pitch QFP Foot Pattern".



*To purchase the IC61-TOOL-4 pull-out tool which detaches an MCU on IC61 Series, please contact Yamaichi Elect Co., LTD.

[Ordering Information] See Appendix H "Ordering Information".

IC61-080-079

REJ01J0001-0100Z
Rev.1.00
2004.04.16

80-pin LCC Socket (Mounting Type) Made by Yamaichi Electronics Co., Ltd.

Function

The IC61-080-079 is an IC socket that can be soldered to a foot pattern for an 80-pin 0.8mm-pitch QFP (80P6N-A or 80P6-B) package MCU (mounting type).

Application

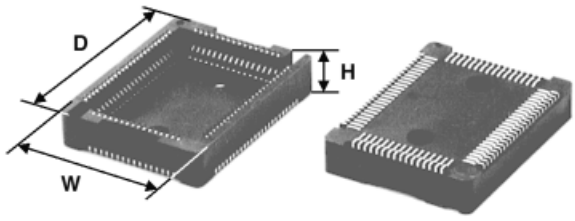
Using this IC socket, developers can connect an 80-pin 0.8 mm-pitch LCC (80D0) package MCU or an emulator probe to the foot pattern on a target that is prepared for an 80P6N-A or 80P6-B package MCU. The foot pattern's land length needed to fit the IC socket is equal to that of the 80P6-B.

Dimensions

26.2(D)×20.0(W)×5.0(H)mm

Foot Pattern Reference Dimensions

See Appendix B "Reference Dimensional Drawing for Common 80-pin 0.8mm-pitch QFP Foot Pattern".



*To purchase the IC61-TOOL-4 pull-out tool which detaches an MCU on IC61 Series, please contact Yamaichi Elect Co., LTD.

[Ordering Information] See Appendix H "Ordering Information".

IC61-080-081

REJ01J0001-0100Z
Rev.1.00
2004.04.16

80-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.

Function

The IC61-080-081 is an IC socket that can be soldered to a foot pattern for an 80-pin 0.8mm-pitch QFP (80P6N-A) package MCU (manually soldering type).

Application

Using this IC socket, developers can connect an 80-pin 0.8 mm-pitch LCC (80D0) package MCU or an emulator probe to the foot pattern on a target that is prepared for an 80P6N-A package MCU. The foot pattern's land length needed to fit the IC socket is equal to that of the 80P6N-A.

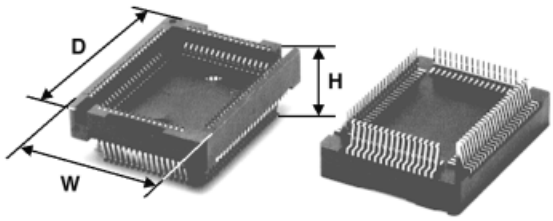
Dimensions

26.2(D)×20.0(W)×8.3(H)mm

* The foot pattern dimension of IC61-080-081 is equal to that of 80P6N-A.

Foot Pattern Reference Dimensions

See Appendix B "Reference Dimensional Drawing for Common 80-pin 0.8mm-pitch QFP Foot Pattern".



*To purchase the IC61-TOOL-4 pull-out tool which detaches an MCU on IC61 Series, please contact Yamaichi Elect Co., LTD.

[Ordering Information] See Appendix H "Ordering Information".

IC61-0804-046

REJ01J0001-0100Z
Rev.1.00
2004.04.16

80-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.

Function

The IC61-0804-046 is an IC socket that can be soldered to a foot pattern for an 80-pin 0.8mm-pitch QFP (80P6-B or 80P6N-A) package MCU (manually soldering type).

Application

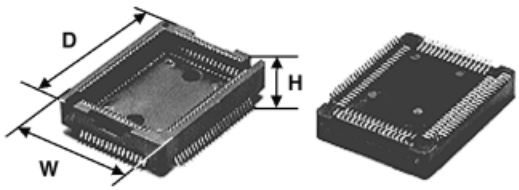
Using this IC socket, developers can connect an 80-pin 0.8 mm-pitch LCC (80D0) package MCU or an emulator probe to the foot pattern on a target that is prepared for an 80P6-B or 80P6N-A package MCU. The foot pattern's land length needed to fit the IC socket is longer than that of the 80P6-B or 80P6N-A.

Dimensions

26.2(D)×20.0(W)×6.2(H)mm

Foot Pattern Reference Dimensions

See Appendix B "Reference Dimensional Drawing for Common 80-pin 0.8mm-pitch QFP Foot Pattern".



*To purchase the IC61-TOOL-4 pull-out tool which detaches an MCU on IC61 Series, please contact Yamaichi Elect Co., LTD.

[Ordering Information] See Appendix H "Ordering Information".

IC61-1004-051

REJ01J0001-0100Z
Rev.1.00
2004.04.16

100-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.

Function

The IC61-1004-051 is an IC socket that can be soldered to a foot pattern for a 100-pin 0.65mm-pitch QFP (100P6S-A) package MCU (manually soldering type).

Application

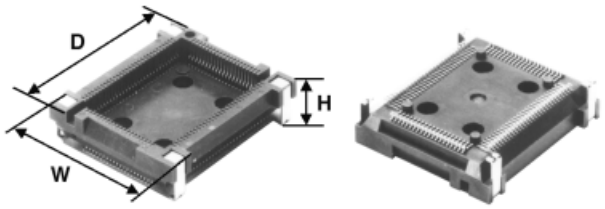
Using this IC socket, developers can connect a 100-pin 0.65 mm-pitch LCC package MCU or an emulator probe to the foot pattern on a target that is prepared for a 100P6S-A package MCU. The foot pattern's land length needed to fit the IC socket is a little longer than that of the 100P6S-A.

Dimensions

26.7(D)×23.6(W)×6.6(H)mm

Foot Pattern Reference Dimensions

See Appendix C "Reference Dimensional Drawings for Common 100-pin 0.65mm-pitch QFP Foot Pattern".



*To purchase the IC61-TOOL-4 pull-out tool which detaches an MCU on IC61 Series, please contact Yamaichi Elect Co., LTD.

[Ordering Information] See Appendix H "Ordering Information".

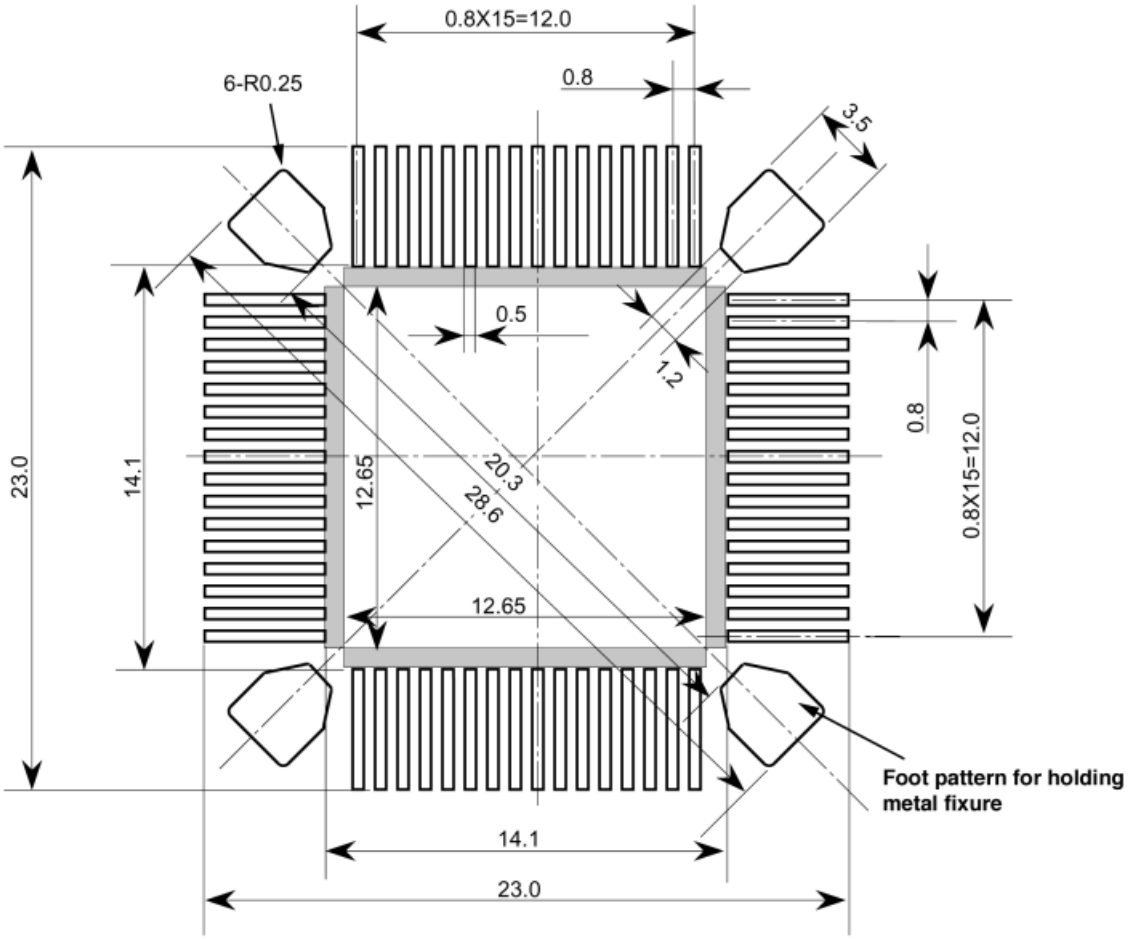
Appendix

Appendix A

Reference Dimensional Drawing for Common 64-pin 0.8mm-pitch QFP Foot Pattern

Package type name	Manufacturer's name and package classification
64P6N-A	Renesas MCU package type name
IC61-0644-052	Yamaichi Electronics Co., Ltd. IC socket type name
IC61-0644-053	
IC61-0644-088	
AXS4643R195C	Matsushita Electric Works, Ltd. IC socket type name

* See Appendix G "Contact Addresses for Partner Products".



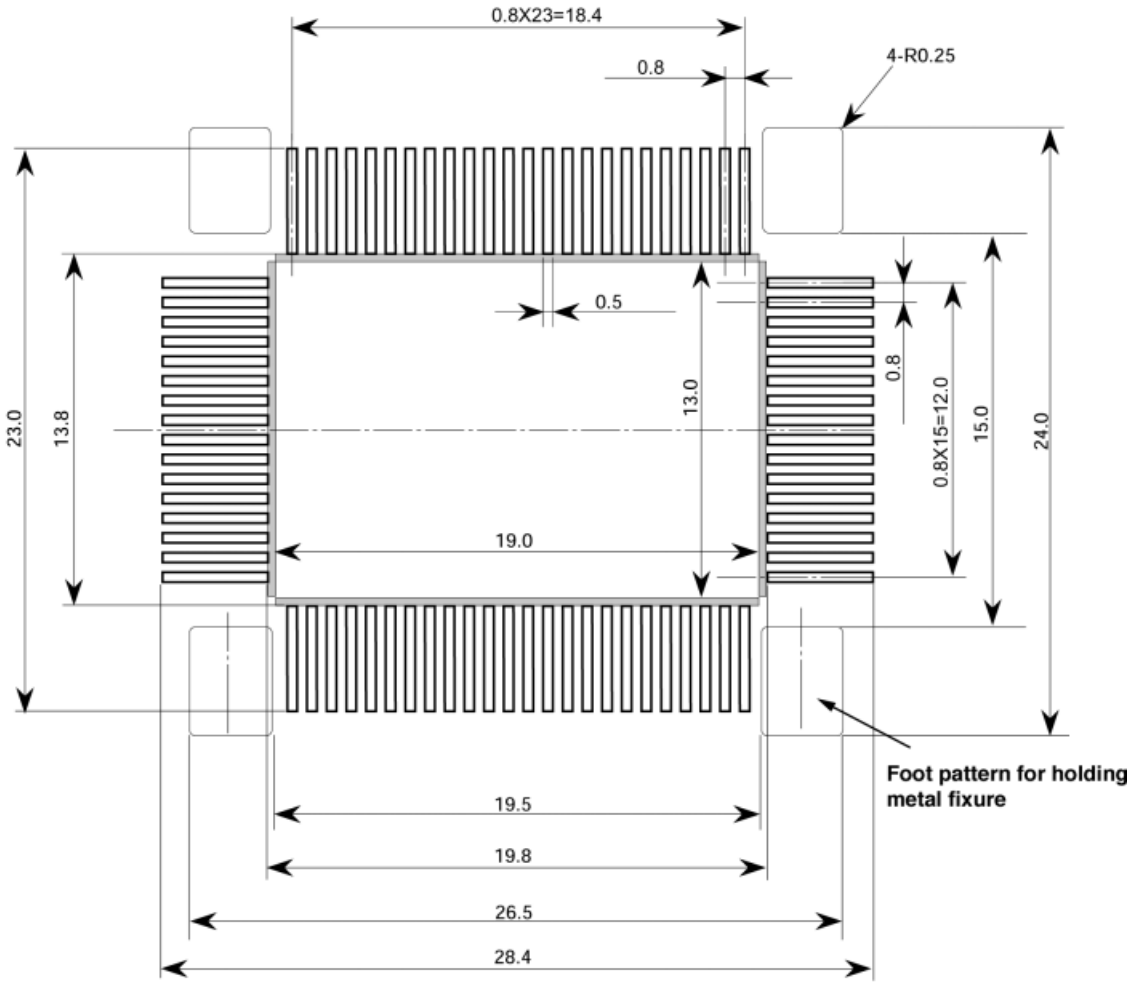
* When using the AXS4643R195C made by Matsushita Electric Works, Ltd., note that the contacts of the IC socket proper touch the PC board in the shaded section. Therefore, be especially careful with pattern wiring to ensure that other pins will not be shorted. (Through holes are not accepted.)
* Only when using the AXS4643R195C made by Matsushita Electric Works, Ltd., be sure to create foot patterns for the holding metal fixtures in four locations.

Appendix B

Reference Dimensional Drawing for Common 80-pin 0.8mm-pitch QFP Foot Pattern

Package type name	Manufacturer's name and package classification
80P6N-A	Renesas MCU package type name
IC61-080-079	Yamaichi Electronics Co., Ltd. IC socket type name
IC61-080-081	
IC61-0804-046	
AXS4803M19	Matsushita Electric Works, Ltd. IC socket type name
NQPACK080RA	Tokyo Eletech Co., Ltd. IC package converter name

* See Appendix G "Contact Addresses for Partner Products".



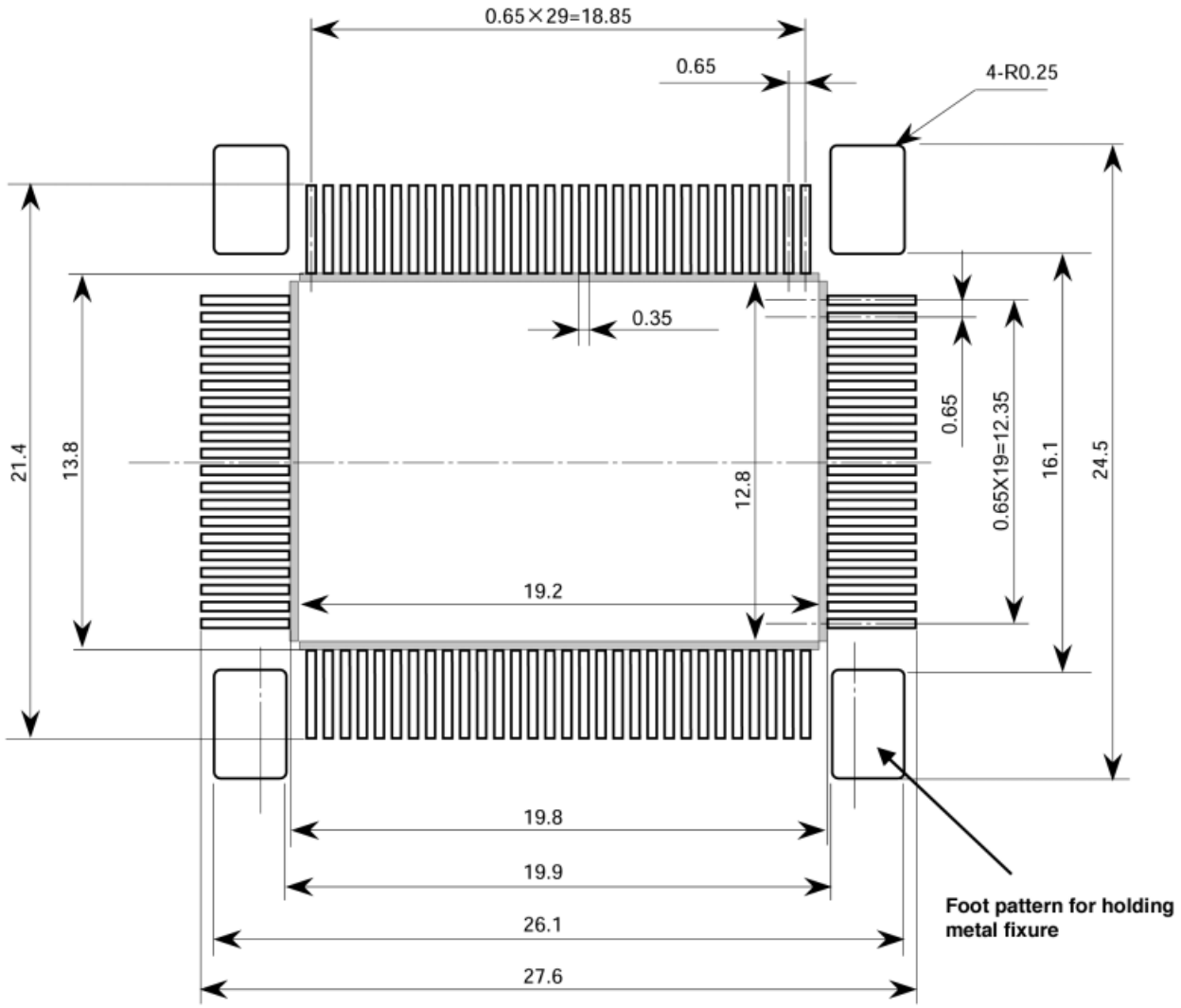
* When using the AXS4803M19 made by Matsushita Electric Works, Ltd., note that the contacts of the IC socket proper touch the PC board in the shaded section. Therefore, be especially careful with pattern wiring to ensure that other pins will not be shorted. (Through holes are not accepted.)
* Only when using the AXS4803M19 made by Matsushita Electric Works, Ltd., be sure to create foot patterns for the holding metal fixtures in four locations.

Appendix C

Reference Dimensional Drawing for Common 100-pin 0.65mm-pitch QFP Foot Pattern

Package type name	Manufacturer's name and package classification
100P6S-A	Renesas MCU package type name
IC61-1004-051	Yamaichi Electronics Co., Ltd. IC socket type name
AXS4003M295C	Matsushita Electric Works, Ltd. IC socket type name
NQPACK100RB	Tokyo Eletech Co., Ltd. IC package converter name

* See Appendix G "Contact Addresses for Partner Products".



* When using the AXS4003M295C made by Matsushita Electric Works, Ltd., note that the contacts of the IC socket proper touch the PC board in the shaded section. Therefore, be especially careful with pattern wiring to ensure that other pins will not be shorted. (Through holes are not accepted.)
* Only when using the AXS4003M295C made by Matsushita Electric Works, Ltd. and IC61-1004-051 made by Yamaichi Electronics Co., Ltd., be sure to create foot patterns for the holding metal fixtures in four locations.

Appendix D

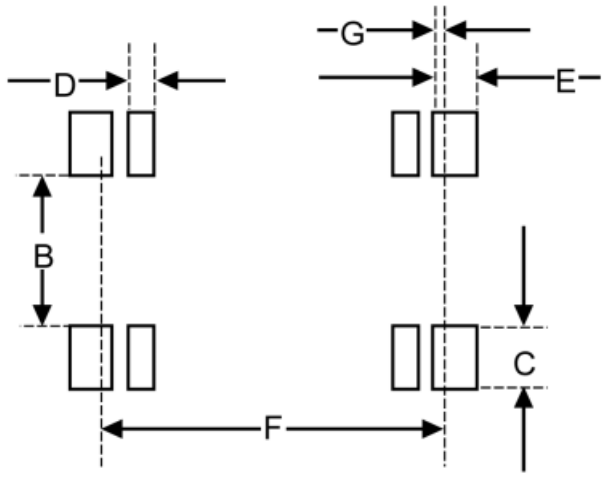
Reference Dimensional Drawing for SSOP Package Foot Patterns Made by Matsushita Electric Works, Ltd.

Reference Dimensional Drawings for 36-pin 0.8mm-pitch SSOP Package Foot Pattern (36P2R-A)

Classification	Dimension (mm)					
	B	C	D	E	G	F
AXS69203601 (made by Matsushita Electric Works, Ltd.)	9.0	2.75	0.4	0.8	0.2	13.6
Renesas MCU	10.16	1.27	0.5	0.5	0.25	13.6
Common foot patterns	9.0	2.75	0.5	0.8	0.25	13.6

Reference Dimensional Drawings for 42-pin 0.8mm-pitch SSOP Package Foot Pattern (42P2R-A, 42P2R-D)

Classification	Dimension (mm)					
	B	C	D	E	G	F
AXS69204201 (made by Matsushita Electric Works, Ltd.)	9.0	2.75	0.4	0.8	0.2	16.0
Renesas MCU	10.16	1.27	0.5	0.5	0.25	16.0
Common foot pattern	9.0	2.75	0.5	0.8	0.25	16.0

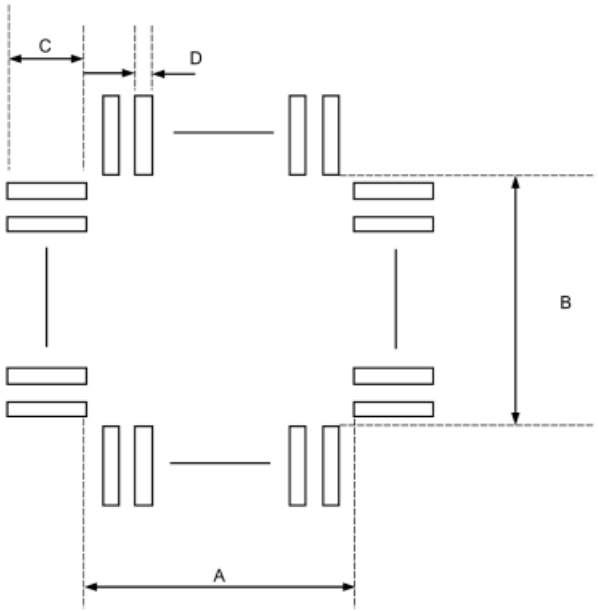


* See Appendix G "Contact Addresses for Partner Products".

Appendix E

List of TQPACK/NQPACK Foot Pattern Made by Tokyo Eletech Co., Ltd.

Product name	Renesas MCU package type name	Pitch	Dimensions			
			A	B	C	D
TQPACK032SA	32P6B-A	0.8mm	6.6	6.6	2.0	0.5
TQPACK044SA	44P6N-A	0.8mm	9.0	9.0	2.1	0.5
TQPACK048SD	48P6D-A	0.5mm	6.5	6.5	1.75	0.25
TQPACK056SB	56P6S-A	0.65mm	9.5	9.5	2.0	0.35
TQPACK064SD	64P6D-A	0.5mm	8.4	8.4	2.3	0.25
TQPACK080SD	80P6Q-A (formerly 80P6D-A)	0.5mm	10.4	10.4	2.3	0.25
TQPACK080SB	80P6S-A	0.65mm	13.4	13.4	1.9	0.35
TQPACK100SD	100P6Q-A (formerly 100P6D-A)	0.5mm	12.7	12.7	2.15	0.25
NQPACK064SA160	64P6N-A 64P6U-A	0.8mm	13.2	13.2	2.0	0.5
NQPACK080RA	80P6N-A 80P6U-A	0.8mm	13.8	19.8	2.25	0.5
NQPACK080SD	80P6Q-A (formerly 80P6D-A)	0.5mm	11.1	11.1	2.0	0.25
NQPACK100RB	100P6S-A 100P6A-A	0.65mm	13.8	19.8	2.4	0.35
NQPACK100SD	100P6Q-A (formerly 100P6D-A)	0.5mm	13.0	13.0	2.0	0.25
NQPACK120SE	120P6R-A	0.4mm	13.0	13.0	2.0	0.225
NQPACK144SD	144P6Q-A	0.5mm	19.0	19.0	2.0	0.25
NQPACK144SE	144PFB-A	0.4mm	15.1	15.1	2.0	0.225



* See Appendix G "Contact Addresses for Partner Products".

Appendix F

List of MCU Connecting Parts Made by Partners

Package name		Pin-pitch (mm)	Package form	Mounting socket	Burn-in socket (with the cover)
20-pin	SSOP	0.65	20P2E-A 20P2F-A	-	IC162-0202-047P (made by Yamaichi Electronics Co., Ltd.)
	SOP	1.27	20P2N-A	-	IC162-0202-050P (made by Yamaichi Electronics Co., Ltd.)
24-pin	SSOP	0.8	24P2Q-A	-	IC51-0242-802 (made by Yamaichi Electronics Co., Ltd.)
32-pin	LQFP	0.8	32P6B-A 32P6U-A	-	IC51-0324-1498 (made by Yamaichi Electronics Co., Ltd.)
	SDIP	1.778	32P4B	IC83-3204-GG4 (made by Yamaichi Electronics Co., Ltd.)	IC59(F)-3204-G4 (made by Yamaichi Electronics Co., Ltd.)
36-pin	SOP	0.8	36P2R-A	-	IC51-0362-309 (made by Yamaichi Electronics Co., Ltd.)
42-pin	SDIP	1.778	42P4B 42S1M	IC38-4206-G4 (made by Yamaichi Electronics Co., Ltd.)	IC59-4206-G4 (made by Yamaichi Electronics Co., Ltd.)
52-pin	SDIP	1.778	52P4B 52S1M	IC83-5206-GG4 (made by Yamaichi Electronics Co., Ltd.)	-
56-pin	QFP	0.8	56P6N-A	-	IC51-0564-924 (made by Yamaichi Electronics Co., Ltd.)
64-pin	SDIP	1.778	64P4B 64S1M	IC38-64075-G4 IC83-64075-G4 (made by Yamaichi Electronics Co., Ltd.)	IC59-64075-G4 (made by Yamaichi Electronics Co., Ltd.) 264-1300-00 (TEXTOOL) (made by Sumitomo 3M)
	QFP	1.0	64P6W-B	-	IC51-820.KS-8076 (made by Yamaichi Electronics Co., Ltd.)
		0.8	64P6N-A	AXS4643R195C (made by Matsushita Electric Works, Ltd.)	IC51-824.KS-8095 (made by Yamaichi Electronics Co., Ltd.)
		0.65	64P6S-A	-	IC51-0644-898 (made by Yamaichi Electronics Co., Ltd.)
		0.5	64P6D-A	-	IC51-0644-807 (made by Yamaichi Electronics Co., Ltd.)
	LCC	0.8	64D0	IC61-0644-052 (manually soldering type) IC61-0644-053 (mounting type) IC61-0644-088 (manually soldering type) (made by Yamaichi Electronics Co., Ltd.)	IC51-0644-1329 (made by Yamaichi Electronics Co., Ltd.)
80-pin	QFP	0.8	80P6-B	IC138-080-003 (made by Yamaichi Electronics Co., Ltd.)	IC51-819.KS-8075 (made by Yamaichi Electronics Co., Ltd.)
			80P6N-A	AXS4803M19 (made by Matsushita Electric Works, Ltd.)	IC51-0804-819-6 (made by Yamaichi Electronics Co., Ltd.)
		0.65	80P6S-A	-	IC51-0804-711 (made by Yamaichi Electronics Co., Ltd.)
		0.5	80P6Q-A (formerly 80P6D-A)	-	IC51-0804-808 (made by Yamaichi Electronics Co., Ltd.)
	LCC	0.8	80D0 80D0M	IC61-080-079 (mounting type) IC61-080-081 (manually soldering type) IC61-0804-046 (manually soldering type) (made by Yamaichi Electronics Co., Ltd.)	IC51-0804-890 (made by Yamaichi Electronics Co., Ltd.)
84-pin	PLCC	1.27	84P0	IC160-0844-XXX (made by Yamaichi Electronics Co., Ltd.)	IC51-0844-401-1 (made by Yamaichi Electronics Co., Ltd.)
100-pin	QFP	0.65	100P6-B	-	IC51-814.KS-8074 (made by Yamaichi Electronics Co., Ltd.)
			100P6S-A	AXS4003M295C (made by Matsushita Electric Works, Ltd.)	IC51-1004-814-6 (made by Yamaichi Electronics Co., Ltd.)
		0.5	100P6Q-A (formerly 100P6D-A)	-	IC51-1004-809 (made by Yamaichi Electronics Co., Ltd.)
	LCC	0.65	100D0 100D0M	IC61-1004-051 (made by Yamaichi Electronics Co., Ltd.)	IC51-1004-1724 (made by Yamaichi Electronics Co., Ltd.)

* See Appendix G "Contact Addresses for Partner Products".

Appendix G

Contact Addresses for Partner Products

SEIKO EPSON CORPORATION	http://www.epson.co.jp/e/other_products/electronic_components_index.htm	
Sumitomo 3M	Web site URL: http://www.mmm.com/US/	
Sunny Giken Inc.	Web site URL: http://www.sunnygiken.co.jp/english/	
Tokyo Eletech Co., Ltd.	Europe	OESS GmbH Senefelder Strasse 1 6054 Rodgau 3 Germany The person in charge Mr. HAMAMOTO TEL: +49-06106-2857890 FAX: +49-06106-2857899
	The Americas	OESS CORPORATION SUNNYVALE OFFICE 1440 Koll Circle, Suite 107 San Jose, CA 95112 The person in charge Mr. HIDAKA TEL: +1-408-437-1582 FAX: +1-408-437-1139
	Asia	DAIMARU KOGYO, Headquarter 2-18-11 KIBA, KOTO-ku TOKYO, JAPAN The person in charge Mr. Hayashi TEL: +81-3-3820-7141 FAX: +81-3-3820-7137
		DAIMARU KOGYO, LTD. HONG KONG BRANCH 1903, Hang Lung Centre, 2-20 Patern St. Causeway, Bay, Hong Kong The person in charge Mr. Yatsugi TEL: +852-2893-9457 FAX: +852-2893-5853
		Shanghai DAIMARU KOGYO, INTERNATIONAL TRADING CO, LTD. 24th Floor, 101 Yin Cheng Road, Pudong New Area, Shanghai People's Republic of China The person in charge Mr. Yokota TEL: +86-21-6841-3588 FAX: +86-21-5066-3408
Matsushita Electric Works, Ltd.	Matsushita Electric Works-Automation Controls Company http://www.nais-e.com/ Online Catalog http://www.naisweb.com/e/ Connectors http://www.naisweb.com/e/connecte/con_eng/	
Yamaichi Elecronics Co., Ltd.	The Americas	Yamaichi Electronics USA, Inc. 2235 Zanker Road, San Jose, CA 95131, USA TEL: +1-408-456-0797 FAX: +1-408-456-0799 Web site URL: http://www.yamaichi.us/
	Europe	Yamaichi Electronics Deutschland GmbH Karl-Schmid-Strasse 9, D-81829 Munich, GERMANY TEL: +49-89-45109-0 FAX: +49-89-45109-110 Web site URL: http://www.yamaichi.de/
	Asia	Yamaichi Electronics Co., Ltd. Test & Burn-in Socket Sec., International Sales Dept. 3-28-7 Nakamagome, Ota-ku, Tokyo 143-8515, JAPAN TEL: +81-3-3778-6161 FAX: +81-3-3778-6181 Web site URL: http://www.yamaichi.co.jp/

Appendix H

Ordering Information (Product Name and Ordering Type Name)

Ordering information (How to specify ordering type name and comment)

In order to the tool product, ordering type name and comment of the product need to be specified.

You can check them in the "List of ordering type name and comment for products". In addition, please note that names of the accessory tools and Ordering Type Name were revised in accordance with the review of the product system in April, 2001.

http://www.renesas.com/eng/products/mpumcu/toolhp/datsheet/acce_e/index.html

List of ordering type name and comment for products (as of April, 2004)

■Converter Used Exclusively for MCU

Converter Used Exclusively for MCU (for M32R Family)

Product Name	Ordering Type Name	Comment	Summary
M32170T-PTC	M32170T-PTC	(Unnecessary.)	Converter for In-circuit Connection (for 32170, 32174 Group)
M32171T-PTC	M32171T-PTC	(Unnecessary.)	Converter for In-circuit Connection (for 32171 Group)
M32173T-PTC	M32173T-PTC	(Unnecessary.)	Converter for In-circuit Connection (for 32172, 32173 Group)
M32176T-PTC	M32176T-PTC	(Unnecessary.)	Converter Board for In-circuit Connection (for 32176 Group)
M32182T2-PTC	M32182T2-PTC	(Unnecessary.)	Converter for In-circuit Connection (for M32182 Group)

Converter Used Exclusively for MCU (for M16C Family)

Product Name	Ordering Type Name	Comment	Summary
M30100T-PTC	M30100T-PTC	(Unnecessary.)	Converter for Connecting 32-pin 0.8mm-pitch QFP for M30100T-PRB (for M16C/10 Group M30100)
M30102T-PTC	M30102T-PTC	(Unnecessary.)	Converter for Connecting 48-pin 0.5mm-pitch QFP for M30100T-PRB (for M16C/10 Group M30102)
M30201T-52SP	M30201T-52SP	(Unnecessary.)	Converter for Connecting Pod Probe M30201T-PRB to 52-pin 1.778mm-pitch SDIP (for M30201 Group)
M30201T-56FP	M30201T-56FP	(Unnecessary.)	Converter for Connecting Pod Probe M30201T-PRB to 56-pin 0.65mm-pitch QFP (for M30201 Group)
M30262T-PTC	M30262T-PTC	(Unnecessary.)	Converter Board for M16C/26 Group M30262 (for M16C/Tiny Series)
M3062PT-80FPB	M3062PT-80FPB	(Unnecessary.)	Converter Board for Connecting 160-core Flexible Board FLX160 to 80-pin 0.65mm-pitch QFP (for M16C/60 Series)
M3T-100LCC-80QSB	M3T-100LCC-80QSB	(Unnecessary.)	Converter from 100-pin 0.65mm-pitch LCC to 80-pin 0.65mm-pitch QFP (for M16C/60 Series)
M3T-FLX-DCT613 (formerly : FLX-DIRECT613)	M3T-FLX-DCT613	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX100 to M3T-DIRECT80S or M3T-FLX-80QSB (for M16C/60 Series)

Converter Used Exclusively for MCU (for 740 Family 740 Series 75xx Group)

Product Name	Ordering Type Name	Comment	Summary
M37515T-PTC	M37515T-PTC	(Unnecessary.)	Converter for Connecting 64-core Flexible Board FLX64 (or M3T-64DIP-DMS) to 48-pin 0.5mm-pitch LQFP (for 7515 and 7516 Group)
M37530T-PTC	M37530T-PTC	(Unnecessary.)	Converter for Connecting 42-pin 1.778mm-pitch SDIP to a 40-pin Narrow-pitch Connector (for 7531, 7540, 7542 and 7544 Groups)
M37530T-PTCB	M37530T-PTCB	(Unnecessary.)	Converter for Connecting 40-pin Narrow-pitch Connector to 32-pin 0.8mm-pitch LQFP (for 7531, 7532, 7534, 7540, 7542 and 7544 Groups)
M37530T-PTCC	M37530T-PTCC	(Unnecessary.)	Converter for Connecting 42-pin RSS Type Emulator MCU to 32-pin 1.778mm-pitch SDIP (for 7531, 7540, 7542 and 7544 Groups)
M37532T-PTC	M37532T-PTC	(Unnecessary.)	Converter for Connecting 42-pin 1.778mm-pitch SDIP to a 40-pin Narrow-pitch Connector (for 7532 and 7534 Groups)
M3T-FLX-DCT503 (formerly : FLX-DIRECT503)	M3T-FLX-DCT503	(Unnecessary.)	Board for Converting Pin Assignments to Connect the M37515T-RPD (for 7515 Group)

Converter Used Exclusively for MCU (for 740 Family)

Product Name	Ordering Type Name	Comment	Summary
M38007T-PRB	M38007T-PRB	(Unnecessary.)	Converter for Connecting 64-pin RSS Type Emulator MCU to 64-pin 0.5, 0.65 and 0.8mm-pitch QFP Target
M38C29T-64FPD	M38C29T-64FPD	(Unnecessary.)	Converter from 100-pin RFS Type Emulator MCU to 64-pin 0.5mm-pitch LQFP (for 38C1, 38C2, 38K0 and 38K2 Group of 38000 Series)
M38C29T-64LCA	M38C29T-64LCA	(Unnecessary.)	Converter from 100-pin RFS Type Emulator MCU to 64-pin 0.8mm-pitch QFP (for 38C1, 38C2, 38K0 and 38K2 Group of 38000 Series)
M3T-28DP-WS	M3T-28DP-WS	(Unnecessary.)	Converter for Connecting Emulator Probe to RSS Type MCU (for PC4701 system)
M3T-28DP-WT	M3T-28DP-WT	(Unnecessary.)	Converter for Connecting Emulator Probe to RSS Type MCU (for PC4701 system/option)
M3T-32LCC-A	M3T-32LCC-A	(Unnecessary.)	Converter for Connecting Emulator Probe to RFS Type MCU (for PC4701 system/option)
M3T-32LCC-S	M3T-32LCC-S	(Unnecessary.)	Converter for Connecting Emulator Probe to RFS Type MCU (for PC4701 system)
M3T-42DIP-DMS	M3T-42DIP-DMS	(Unnecessary.)	Converter for Connecting 42-pin RSS Type Emulator MCU to M3T-DCT42B-450 (or M3T-SSOP42B-450)
M3T-64DIP-DMS	M3T-64DIP-DMS	(Unnecessary.)	Converter for Connecting 64-pin RSS Type Emulator MCU to M3T-DUMMY64
PCA4625	PCA4625	(Unnecessary.)	Converter for Connecting 64-pin RSS Type Emulator MCU to 52-pin 1.778mm-pitch SDIP
PCA4627	PCA4627	(Unnecessary.)	Converter for Connecting 52-pin RSS Type Emulator MCU to 42-pin 1.778mm-pitch SDIP
PCA4650G02	PCA4650G02	(Unnecessary.)	Converter for Connecting RSS Type Emulator MCU (for PC4600 system)
PCA4906	PCA4906	(Unnecessary.)	Converter for Connecting 42-pin RSS Type Emulator MCU to 32-pin 1.778mm-pitch SDIP
PCA4907	PCA4907	(Unnecessary.)	Converter for Connecting 42-pin RSS Type Emulator MCU to 56-pin 0.8mm-pitch QFP
PCA4912	PCA4912	(Unnecessary.)	Converter for Connecting 42-pin RSS Type Emulator MCU to 32-pin 1.27mm-pitch SOP
PCA4913	PCA4913	(Unnecessary.)	Converter for Connecting 42-pin RSS Type Emulator MCU to 44-pin 0.8mm-pitch QFP
PCA4933	PCA4933	(Unnecessary.)	Converter for Connecting Emulator Probe to RFS Type Emulator MCU (for PC4701, compact emulator, and PC4600 systems)

Converter Used Exclusively for MCU (for 4500 Series)

Product Name	Ordering Type Name	Comment	Summary
M34513T-PTCA	M34513T-PTCA	(Unnecessary.)	Converter for Connecting 32-pin 1.778mm-pitch SDIP (for 4500 Series)
M34513T-PTCB	M34513T-PTCB	(Unnecessary.)	Converter for Connecting 32-pin 1.778mm-pitch SDIP to 40-core narrow-pitch (for 4500 Series)
M34513T-PTCC	M34513T-PTCC	(Unnecessary.)	Converter for Connecting 40-core narrow-pitch to 32-pin 0.8mm-pitch LQFP (for 4500 Series)
M34553T-PTCA	M34553T-PTCA	(Unnecessary.)	50-pin Narrow-Pitch Connector Converter Board for M34552T2-CPE (for 4553, 4556 Group)
M34553T-PTCB	M34553T-PTCB	(Unnecessary.)	Converter Board for 48-pin 0.5-mm-pitch LQFP for M34552T2-CPE (for 4553 Group)

■General-purpose Product

General-purpose Product (Pitch Converter Board)

Product Name	Ordering Type Name	Comment	Summary
80P6-80P6S	M3T-HWOTHERS	80P6-80P6S	Converter for Connecting 80-pin 0.8mm-pitch LCC to 80-pin 0.65mm-pitch QFP
M3T-100LCC-QSD	M3T-100LCC-QSD	(Unnecessary.)	Converter for Connecting 100-pin 0.65mm-pitch LCC to 100-pin 0.5mm-pitch LQFP
M3T-64LCC-QSD	M3T-64LCC-QSD	(Unnecessary.)	Converter for Connecting 64-pin 0.8mm-pitch LCC to 64-pin 0.5mm-pitch LQFP
M3T-80LCC-QSD	M3T-80LCC-QSD	(Unnecessary.)	Converter for Connecting 80-pin 0.8mm-pitch LCC to 80-pin 0.5mm-pirch QFP
M3T-F160-100NSD	M3T-F160-100NSD	(Unnecessary.)	Converter for Connecting 160-core Flexible Board FLX160 to 100-pin 0.5mm-pitch LQFP
M3T-F160-100NSE	M3T-F160-100NSE	(Unnecessary.)	Converter for Connecting 160-core Flexible Board FLX160 to 100-pin 0.4mm-pitch TQFP
M3T-F160-128NRD	M3T-F160-128NRD	(Unnecessary.)	Converter for Connecting 160-core Flexible Board FLX160 to 128-pin 0.5mm-pitch LQFP
M3T-F160-EXTC	M3T-F160-EXTC	(Unnecessary.)	Extension Cable for FLX160
M3T-FLX-100LCC	M3T-FLX-100LCC	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX100 to 100-pin 0.65mm-pitch LCC
M3T-FLX-100NRB	M3T-FLX-100NRB	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX100 to 100-pin 0.65mm-pitch QFP
M3T-FLX-100NSD	M3T-FLX-100NSD	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX100 to 100-pin 0.5mm-pitch LQFP
M3T-FLX-100NSE	M3T-FLX-100NSE	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX100 to 100-pin 0.4mm-pitch TQFP
M3T-FLX-120NSE	M3T-FLX-120NSE	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX160 to 120-pin 0.4mm-pitch LQFP
M3T-FLX-144NSD	M3T-FLX-144NSD	(Unnecessary.)	Converter for Connecting 160-core Flexible Board FLX160 to 144-pin 0.5mm-pitch LQFP
M3T-FLX-144NSE	M3T-FLX-144NSE	(Unnecessary.)	Converter for Connecting 160-core Flexible Board FLX160 to 144-pin 0.4mm-pitch TQFP
M3T-FLX-42SPB	M3T-FLX-42SPB	(Unnecessary.)	Converter for Connecting 42-pin 1.778mm-pitch SDIP
M3T-FLX-64NSA	M3T-FLX-64NSA	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX100 to 64-pin 0.8mm-pitch QFP/LQFP
M3T-FLX-80LCC	M3T-FLX-80LCC	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX100 to 80-pin 0.8mm-pitch LCC
M3T-FLX-80QSB	M3T-FLX-80QSB	(Unnecessary.)	Converter for 100-core Flexible Board FLX100 to 80-pin 0.65mm-pitch QFP
M3T-FLX-80NRA	M3T-FLX-80NRA	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX100 to 80-pin 0.8mm-pitch QFP/LQFP
M3T-FLX-80NSD	M3T-FLX-80NSD	(Unnecessary.)	Converter for Connecting 100-core Flexible Board FLX100 to 80-pin 0.5mm-pitch LQFP
PCA4687A	PCA4687A	(Unnecessary.)	Converter for Connecting 100-pin 0.65mm-pitch QFP to 100-pin 0.65mm-pitch LCC
PCA4688A	PCA4688A	(Unnecessary.)	Converter for Connecting 80-pin 0.8mm-pitch QFP to 80-pin 0.8mm-pitch LCC
PCA7759	PCA7759	(Unnecessary.)	MCU Signal Measurement Board for Renesas Emulator

General-purpose Product (Accessories Used Exclusively for Height Adjustment)

Product Name	Ordering Type Name	Comment	Summary
PCA4687B	PCA4687B	(Unnecessary.)	Converter for Connecting 100-pin 0.65mm-pitch LCC to 100-pin 0.65mm-pitch LCC (for Height Adjustment)
PCA4688B	PCA4688B	(Unnecessary.)	Converter for Connecting 80-pin 0.8mm-pitch LCC to 80-pin 0.8mm-pitch LCC (for Height Adjustment)

General-purpose Product (Direction Converting Accessory)

Product Name	Ordering Type Name	Comment	Summary
M3T-FLX100-R	M3T-FLX100-R	(Unnecessary.)	Board for converting direction by 180 degrees
M3T-FLX100-T	M3T-FLX100-T	(Unnecessary.)	Board for converting direction by 90 degrees
M3T-FLX64-R	M3T-FLX64-R	(Unnecessary.)	Board for converting direction by 180 degrees
M3T-FLX64-T	M3T-FLX64-T	(Unnecessary.)	Board for converting direction by 90 degrees

General-purpose Product (Accessories Associated with Dummy IC)

Product Name	Ordering Type Name	Comment	Summary
M3T-100LCC-DMS	M3T-100LCC-DMS	(Unnecessary.)	Converter for Connecting 100-pin 0.65mm-pitch LCC to M3T-DUMMY100S
M3T-64LCC-DMS	M3T-64LCC-DMS	(Unnecessary.)	Converter for Connecting 64-pin 0.8mm-pitch LCC to M3T-DUMMY64
M3T-80LCC-DMS	M3T-80LCC-DMS	(Unnecessary.)	Converter for Connecting 80-pin 0.8mm-pitch LCC to M3T-DUMMY80
M3T-DCT42B-450 (formerly : DIRECT42-450-50)	M3T-DCT42B-450	(Unnecessary.)	Direct Dummy IC for 42-pin 0.8mm-pitch SSOP
M3T-DIRECT100S	M3T-DIRECT100S	(Unnecessary.)	Direct Dummy IC for 100-pin 0.65mm-pitch QFP
M3T-DIRECT80S	M3T-DIRECT80S	(Unnecessary.)	Direct Dummy IC for 80-pin 0.65mm-pitch SSOP
M3T-DUMMY100S	M3T-DUMMY100S	(Unnecessary.)	Dummy IC for 100-pin 0.65mm-pitch QFP (100P6S-A, 100P6S-E)
M3T-DUMMY64	M3T-DUMMY64	(Unnecessary.)	Dummy IC for 64-pin 0.8mm-pitch QFP (64P6N-A)
M3T-DUMMY80	M3T-DUMMY80	(Unnecessary.)	Dummy IC for 80-pin 0.8mm-pitch QFP (80P6N-A)
M3T-SSOP36B-450 (formerly : SSOP36-450-40)	M3T-SSOP36B-450	(Unnecessary.)	Direct Dummy IC for 36-pin 0.8mm-pitch SSOP
M3T-SSOP42B-450	M3T-SSOP42B-450	(Unnecessary.)	Direct Dummy IC for 42-pin 0.8mm-pitch SSOP

■Standard Pitch (2.54mm) Converter

Product Name	Ordering Type Name	Comment	Summary
PCA4979	PCA4979	(Unnecessary.)	Converter from 80-pin 0.65mm-pitch QFP (80P6S-A) to 40-pin DIL Standard-pitch
PCA4981 BARE	M3T-HWOTHERS	PCA4981 BARE	Converter from 80-pin 0.8mm-pitch QFP (80P6-B or 80P6N-A) or LCC (80D0) to 40-pin DIL Standard Pitch
PCA4981A	PCA4981A	(Unnecessary.)	Converter from 80-pin 0.8mm-pitch QFP (80P6-B) to 40-pin DIL Standard Pitch
PCA4981B	PCA4981B	(Unnecessary.)	Converter from 80-pin 0.8mm-pitch LCC (80D0) to 40-pin DIL Standard Pitch (with IC Socket)
PCA4981C	PCA4981C	(Unnecessary.)	Converter from 80-pin 0.8mm-pitch QFP (80P6N-A) to 40-pin DIL Standard Pitch
PCA4988	PCA4988	(Unnecessary.)	Converter from 80-pin 0.8mm-pitch LCC (80D0) to 40-pin DIL Standard Pitch (with LCC Socket)
PCA4989	PCA4989	(Unnecessary.)	Converter from 80-pin 0.65mm-pitch QFP (80P6S-A) to 40-pin DIL Standard Pitch (Different Pin Layout from the PCA4979)
PCA7750G02	PCA7750G02	(Unnecessary.)	Converter board from 80-pin 0.8mm-pitch LCC (80D0) to 40-pin DIL Standard Pitch (with LCC Socket and the Pattern for Oscillator)
PCA7750G02-BARE	PCA7750G02-BARE	(Unnecessary.)	Converter board from 80-pin 0.8mm-pitch QFP (80P6N-A) or LCC (80D0) to 40-pin DIL Standard Pitch
PCA7752AG02	PCA7752AG02	(Unnecessary.)	Converter board from 100-pin 0.65mm-pitch LCC (100D0) to 50-pin DIL Standard Pitch (with LCC Socket)
PCA7752AG02-BARE	PCA7752AG02-BARE	(Unnecessary.)	Converter board from 100-pin 0.65mm-pitch QFP (100P6S-A) or LCC (100D0) to 50-pin DIL Standard Pitch
PCA7752B	PCA7752B	(Unnecessary.)	Converter from 100-pin 0.65mm-pitch QFP (100P6S-A) to 50-pin DIL Standard Pitch
PCA7754	PCA7754	(Unnecessary.)	Converter from 100-pin 0.5mm-pitch QFP (100P6Q-A) to 50-pin DIL Standard Pitch
PCA7755A	PCA7755A	(Unnecessary.)	Converter from 64-pin 0.8mm-pitch QFP (64P6N-A) to 32-pin DIL Standard Pitch
PCA7755B	PCA7755B	(Unnecessary.)	Converter from 64-pin 0.8mm-pitch LCC (64D0) to 32-pin DIL Standard Pitch
PCA7756	PCA7756	(Unnecessary.)	Converter from 80-pin 0.5mm-pitch QFP (80P6Q-A) to 40-pin DIL Standard Pitch

■Sealed Conversion Board

Product Name	Ordering Type Name	Comment	Summary
SEAL100FP	M3T-HWOTHERS	SEAL100FP	Sealed Conversion Board for Converting from 100-pin 0.65mm-pitch QFP (100P6S-A) or LCC (100D0) to 100-pin Standard Pitch
SEAL64FP	M3T-HWOTHERS	SEAL64FP	Sealed Conversion Board for Converting from 64-pin 0.8mm-pitch QFP (64P6N-A) or LCC (64D0) to 64-pin Standard Pitch
SEAL80FP	M3T-HWOTHERS	SEAL80FP	Sealed Conversion Board for Converting from 80-pin 0.8mm-pitch QFP (80P6-B or 80P6N-A) or LCC (80D0) to 80-pin Standard Pitch
SEAL80FPS	M3T-HWOTHERS	SEAL80FPS	Sealed Conversion Board for Converting from 80-pin 0.8mm-pitch LCC (80D0) to 80-pin Standard Pitch

■Temporary Target Board

Product Name	Ordering Type Name	Comment	Summary
M37450T-ADF	M37450T-ADF	(Unnecessary.)	Temporary target board for M37451RFS
M37450T-ADS	M37450T-ADS	(Unnecessary.)	Temporary target board for M37451RSS
M37531T-ADS	M37531T-ADS	(Unnecessary.)	Temporary target board for M37531RSS, M37532RSS, M37534RSS, M37536RSS, M37540RSS
M38007T-ADS	M38007T-ADS	(Unnecessary.)	Temporary target board for M38007RSS, M38027RSS, M38117RSS, M38127RSS, M38807RSS, M38817RSS, M38887RSS
M38067T-ADF	M38067T-ADF	(Unnecessary.)	Temporary target board for M38067RFS, M38078RFS, M38177RFS, M38207RFS, M38227RFS, M38867RFS
M38187T-ADF	M38187T-ADF	(Unnecessary.)	Temporary target board for M38187RFS, M38197RFS, M38257RFS, M38267RLFS, M38277RFS
M38517T-ADS	M38517T-ADS	(Unnecessary.)	Temporary target board for M38517RSS and M38507ARLSS
M38C29T-ADF	M38C29T-ADF	(Unnecessary.)	Temporary target board for M38C29RLFS
M38C89T-ADF	M38C89T-ADF	(Unnecessary.)	Temporary target board for M38C89RLFS
M38K29T-ADF	M38K29T-ADF	(Unnecessary.)	Temporary target Board for M38K09RFS, M38K29RFS

■Oscillator Board

Product Name	Ordering Type Name	Comment	Summary
OSC-2	M3T-HWOTHERS	OSC-2	Oscillator board (dumping resistor mounting type)
OSC-3	M3T-HWOTHERS	OSC-3	Oscillator board (oscillation module mounting type)
OSC-4	M3T-HWOTHERS	OSC-4	Oscillator board (8 and 16MHz selection type)

■LCC Socket

Product Name	Ordering Type Name	Comment	Summary
IC61-0644-052	M3T-HWOTHERS	IC61-0644-052	64-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.
IC61-0644-053	M3T-HWOTHERS	IC61-0644-053	64-pin LCC Socket (Mounting Type) Made by Yamaichi Electronics Co., Ltd.
IC61-0644-088	M3T-HWOTHERS	IC61-0644-088	64-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.
IC61-080-079	M3T-HWOTHERS	IC61-080-079	80-pin LCC Socket (Mounting Type) Made by Yamaichi Electronics Co., Ltd.
IC61-080-081	M3T-HWOTHERS	IC61-080-081	80-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.
IC61-0804-046	M3T-HWOTHERS	IC61-0804-046	80-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.
IC61-1004-051	M3T-HWOTHERS	IC61-1004-051	100-pin LCC Socket (Manually Soldering Type) Made by Yamaichi Electronics Co., Ltd.

Appendix I

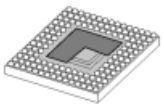
Technical Term

CUBE

Electrodes that can be mounted on the user system's foot pattern.

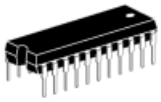
Cavity BGA

Cavity Ball Grid Array



DIP

Dual Inline Package



Fine pitch BGA

Fine pitch Ball Grid Array

Flip-clip BGA

Flip-clip Ball Grid Array

HQFP

Heat sinked Quad Flat Package

HSOP

Heat sinked Small Outline Package

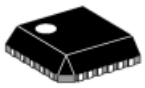
Coding Conventions of IC Package

Example: 16P 2 N – A

- Number of pins
  However, if some leads are deleted or integrated intentionally, this figure may not coincide with the actual number of pins. The actual number of pins and this number may not match.
- Package structure
  - C : Transparent plastic type
  - D : Ceramic chip carrier type
  - F : Glass epoxy board type
  - K : Glass seal ceramic type
  - N : Glass epoxy board type (memory module)
  - P : Plastic type
  - S : Metal seal ceramic type
  - W : Tape carrier type
- Package structure
  - 1 : DIP(other than plastic type)
  - 2 : SOP
  - 3 : TSOP
  - 4 : DIP(plastic type)
  - 5 : SIP, ZIP
  - 6 : QFP
  - 7 : BGA
  - 8 : PGA
  - 9 : Special type
  - 0 : QFJ, SOJ
  - F : TQFP
  - H : CSP
  - J : CSP
  - T : TSOP
- Auxiliary symbol for external form (1)
  This symbol is included as necessary to identify the main body size or lead pitch. There are no general common rules for this symbol.
- Auxiliary symbol for external form (2)
  This symbol is included as necessary to identify the lead shape such as lead bend. There are no general common rules for this symbol.

LCC

Leadless Chip Carrier (QFN: Quad Flat Non-leaded Package)



LCCSocket

IC socket used to connect an LCC package MCU to a QFP package foot target.

LQFP

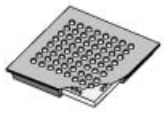
Low profile Quad Flat Package

MCP

Multi Chip Package

Mold CSP

Mold Chip Size/Scale Package



NQPACK (made by Tokyo Eletech Co., Ltd.)

Board that is mounted on the target system's foot pattern and used to connect to the emulator via the NQSOCKET (male side).

NQSOCKET (made by Tokyo Eletech Co., Ltd.)

Socket used to connect NQPACK and board (female side).

Overmold BGA

Overmold Ball Grid Array

PC4701

The PC4701 is a generic name representing the PC4701U, PC4701M, PC4701HS, PC4701L, PC4700H, and PC4700L. Production of the PC4701M, PC4701HS, PC4701L, PC4700H and PC4700L has been discontinued.

PC4816

The PC4816 is a generic name representing the PC4816B, PC4816A and PC4816. Production of thePC4816B, PC4816A and PC4816 has been discontinued.

QFP

Quad Flat Package

RFS

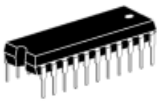
QFP/LCC package emulator MCU

RSS

DIP package emulator MCU

SDIP

Shrink Dual Inline Package



Smart BGA

Smart Ball Grid Array

SMCP

Stacked Multi Chip Package

SSOP

Shrink Small Outline Package

Stacked CSP

Stacked Chip Size/Scale Package

TQFP

Thin Quad Flat Package

TQPACK (made by Tokyo Eletech Co., Ltd.)

Board that is mounted on the target system's foot pattern and used to connect to the emulator via the TQSOCKET (male side)

TQSOCKET (made by Tokyo Eletech Co., Ltd.)

Socket used to connect TQPACK and board (female side).

TSOP

Thin Small Outline Package

ZIP

Zigzag In-line Package

Accessory Tool

This is a generic name used for pitch converters, dummy IC, temporary target boards, and oscillator boards.

Emulator Probe

Emulator's tip part.

Dummy IC

The dummy IC means a temporary MCU that has the same dimensions as those of the MCU package and is used to connect the emulator probe and target system together. At the top it has a connector to connect to the emulator probe. Then, after being assembled with a socket frame and socket (included with the package), it is attached to the foot pattern on the target system. Also, during board-mounted evaluation, you can use this same socket to mount an MCU of the same type as the dummy IC. Use of the dummy IC allows the IC sockets conventionally used on the target system during debugging or board-mounted evaluation to be shared among various types of MCUs.

Temporary Target Board (for 8-bit MCU)

This board allows developers to evaluate the emulator MCU independently as a single unit by applying the minimum signals required to operate the emulator MCU (e.g., VCC, GND, CNVSS, clock and RESET). Developers can use this board when wanting to proceed with software development or verify the operation of the PC4701/PC4600 system in cases where the target system is not available. Some signals such as VCC, GND and CNVSS must be externally supplied. The RESET signal can be supplied by the emulation pod that is designed for use with the PC4701/PC4600. The clock signal can be taken from the on-board oscillator circuit.

Burn-in IC Socket

IC socket used for evaluation purpose.

Package Converter

Use this converter to convert the pitch of your MCU or emulator probe to the same pitch as the MCU foot pattern on the target.

Standard Pitch (2.54mm) Converter

When the user system is built on a universal board, use this converter to convert the pitch of your MCU or emulator probe to the standard pitch.

Bare

Board without any parts mounted.

Converter (Pitch Converter)

This means a board that is used to convert an IC package's pin pitch and signal arrangement. When broadly classified, main products are either a package converter and a standard pitch converter.

Appendix J

Alphabetical Index of Product Names

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