

To our customers,

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## Old Company Name in Catalogs and Other Documents

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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# M34553T-PTCB

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

## User's Manual

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### CAUTION

If the requirements shown in the "CAUTION" sentences are ignored, the equipment may cause personal injury or damage to the products.

Renesas Tools Homepage <http://www.renesas.com/en/tools>

## 1. Outline

The M34553T-PTCB is a converter board for connecting the M34552T2-CPE to a 48-pin 0.5-mm-pitch LQFP (48P6Q-A) foot pattern (4553 Group) with the M34553T-PTCA.

## 2. Components (See Figure 1)

- |  |     |
|--|-----|
| (1) M34553T-PTCB converter board                       | x 1 |
| (2) YQPACK048SD<br>(made by Tokyo Eletech Corporation) | x 1 |
| (3) NQPACK048SD<br>(made by Tokyo Eletech Corporation) | x 1 |
| (4) YQ-GUIDE's<br>(made by Tokyo Eletech Corporation)  | x 4 |
| (5) User's manual (This manual)                        | x 1 |
| (6) User's manual (Japanese)                           | x 1 |

## 3. Specifications

Table 1 Specifications

|   |                                       |
|---|---------------------------------------|
| Applicable package                        | 48P6Q-A<br>(48-pin 0.5-mm-pitch LQFP) |
| Insertion/removal iterations of connector | 20 times                              |

## 4. Usage (See Figure 2)

You can use the M34553T-PTCB for debugging and board mounted evaluation in common by mounting the NQPACK048SD on the target board.

### 1. For debugging

Mount the NQPACK048SD and the YQPACK048SD in that order on a foot pattern of the target system. Then attach the YQ-GUIDE's and M34553T-PTCB to the YQPACK048SD. Lastly, connect the M34553T-PTCA to the M34553T-PTCB.

### 2. For board-mounted evaluation

Mount an MCU with PROM (OTP) and the HQPACK048SD (not included) on the NQPACK048SD on the target system. Then secure them with the screws.

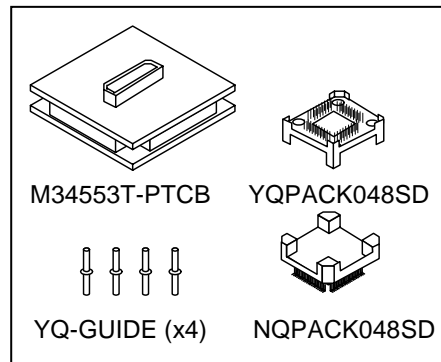


Figure 1 Package Components

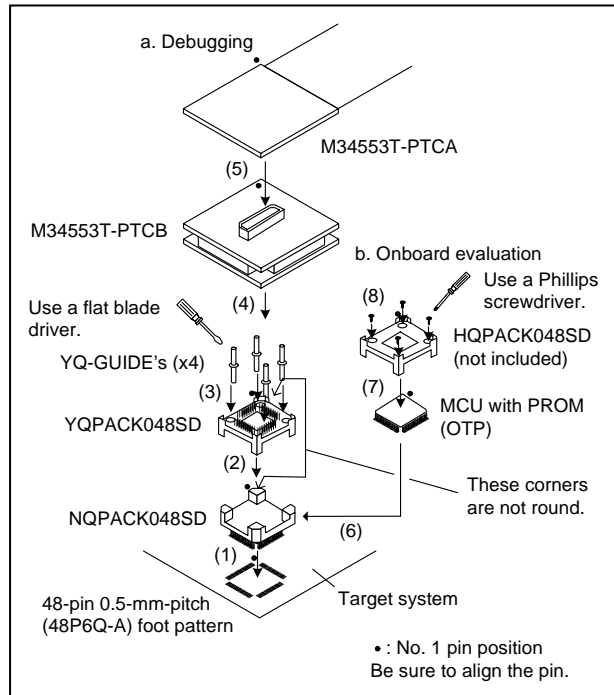


Figure 2 Usage of the M34553T-PTCB

## 5. Connection Procedure (See Figure 3)

3. Mount the NQPACK048SD.
4. Attach the YQPACK048SD on the NQPACK048SD.
5. Secure the four corners of the YQPACK048SD with the YQ-GUIDE's.

- Do NOT use the screws included with the YQPACK048SD for securing it.
- Do NOT use the driver included with the NQPACK048SD for securing the YQ-GUIDE's. It is used for securing the HQPACK048SD.

6. Attach the M34553T-PTCB to the YQPACK048SD.
7. Connect the M34553T-PTCA converter board to the M34553T-PTCB.

Before using the M34553T-PTCB, be sure to read "7. Precautions" on page 4.

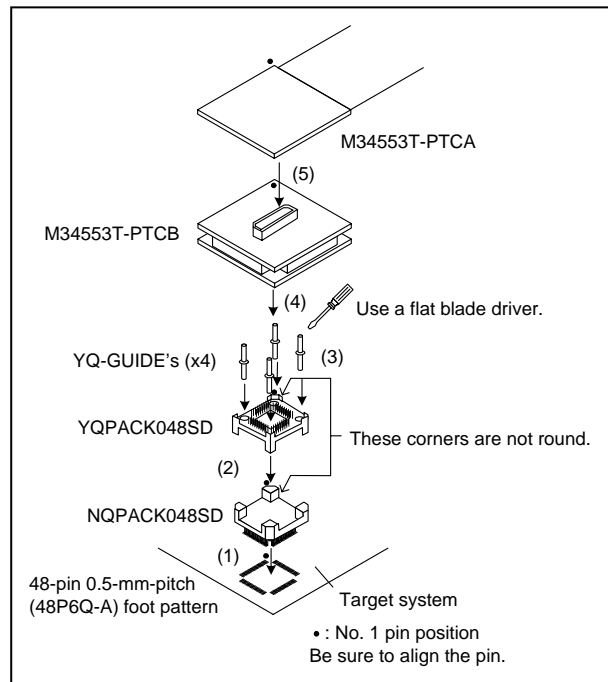


Figure 3 Connection procedure of the M34553T-PTCB

## 6. External Dimensions and a Sample Foot Pattern (see Figure 4)

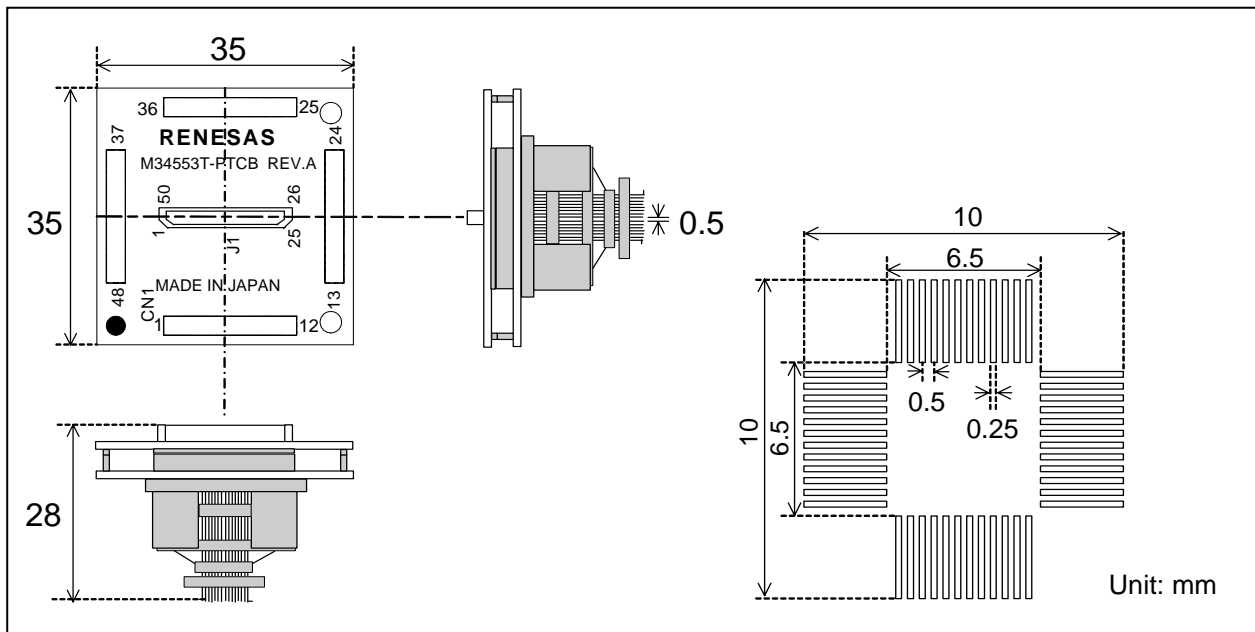


Figure 4 External dimensions and a sample foot pattern

## 7. Precautions

### ⚠ CAUTION

#### Cautions to Be Taken for Handling This Product:



- Be sure to align the pins when connecting the M34553T-PTCB.
- Do not apply excessive stress to the M34553T-PTCB main unit.
- To attach the M34553T-PTCB, be sure to use the YQ-GUIDE's included with this product.
- Do not use the screws included with the YQPACK048SD for securing it.

### IMPORTANT

#### Regarding This Product:

- We cannot accept any request for repair.
- For purchasing the NQPACK048SD, YQPACK048SD and HQPACK048SD, contact the following:  
Tokyo Eletech Corporation  
<http://www.tetc.co.jp/>
- For inquiries about this product or the contents of this manual, contact your local distributor.  
Renesas Tool Homepage <http://www.renesas.com/en/tools>

## 8. Correspondence of Connectors J1, J2

Table 2 lists the correspondence of the M34553T-PTCB and NQPACK.

Table 2 Correspondence of the M34553T-PTCB and NQPACK

| Pin number of connector J1 | NQPACK | Signal    | Pin number of connector J1 | NQPACK | Signal    |
|----------------------------|--------|-----------|----------------------------|--------|-----------|
| 1                          | 41     | SEG12     | 26                         | NC     | NC        |
| 2                          | 42     | SEG13     | 27                         | 45     | D5/INT    |
| 3                          | 19     | XIN       | 28                         | 46     | P20/SEG17 |
| 4                          | 20     | XOUT      | 29                         | 47     | P21/SEG18 |
| 5                          | 21     | CNVSS     | 30                         | 48     | P22/SEG19 |
| 6                          | 22     | XCIN/D6   | 31                         | 1      | P23/SEG20 |
| 7                          | 23     | XCOU/D7   | 32                         | 2      | P00/SEG21 |
| 8                          | 24     | RESET*    | 33                         | 3      | P01/SEG22 |
| 9                          | 25     | COM0      | 34                         | 4      | P02/SEG23 |
| 10                         | 26     | COM1      | 35                         | 5      | P03/SEG24 |
| 11                         | 27     | COM2      | 36                         | 6      | P10/SEG25 |
| 12                         | 28     | COM3      | 37                         | 7      | P11/SEG26 |
| 13                         | 29     | SEG0/VLC3 | 38                         | 8      | P12/SEG27 |
| 14                         | 30     | SEG1/VLC2 | 39                         | 9      | P13/SEG28 |
| 15                         | 31     | SEG2/VLC1 | 40                         | 10     | D0        |
| 16                         | 32     | SEG3      | 41                         | 11     | D1        |
| 17                         | 33     | SEG4      | 42                         | 12     | D2        |
| 18                         | 34     | SEG5      | 43                         | 13     | D3        |
| 19                         | 35     | SEG6      | 44                         | 14     | D4        |
| 20                         | 36     | SEG7      | 45                         | 15     | D5/INT    |
| 21                         | 37     | SEG8      | 46                         | 16     | C/CNTR    |
| 22                         | 38     | SEG9      | 47                         | 17     | VDD       |
| 23                         | 39     | SEG10     | 48                         | 18     | VSS       |
| 24                         | 40     | SEG11     | 49                         | 43     | SEG14     |
| 25                         | NC     | NC        | 50                         | 44     | SEG15     |

(NC: No connection)