

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

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

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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# ROE521237CFK00

Converter Board for 48-pin 0.5-mm-pitch LQFP

## User's Manual

\* NQPACK, YQPACK, YQSOCKET, YQ-GUIDE, HQPACK, TQPACK and TQSOCKET are trademarks of Tokyo Eletech Corporation.

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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 R0E521237CFK00 is a converter board for connecting the emulation probe R0E521000EPB00 and the compact emulator R0E521000CPE00 for R8C/Tiny Series to a foot pattern for 48-pin 0.5-mm-pitch LQFP (PLQP0048KB-A, formerly 48P6Q-A) of R8C/20, 21, 22, and 23 Groups.

## 2. Package Components (See Figure 1)

Table 1 Package Components

Item	Quantity
R0E521237CFK00 (Base board R0E521000CIF00 and 150mm FFC cable included)	1 pc.
YQPACK048SD (made by Tokyo Eletech Corporation)	1 pc.
NQPACK048SD (made by Tokyo Eletech Corporation)	1 pc.
YQ-GUIDE (made by Tokyo Eletech Corporation)	4 pcs.
R0E521237CFK00 User's Manual (This manual)	1 pc.

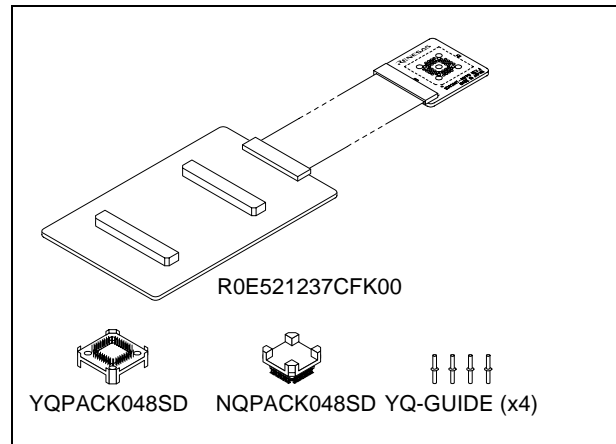


Figure 1 Package components of the R0E521237CFK00

## 3. Specifications

Table 2 Specifications

Applicable package	PLQP0048KB-A, formerly 48P6Q-A (48-pin 0.5-mm-pitch LQFP)
Insertion/removal iterations of connector	Between R0E521237CFK00 and YQPACK048SD: 100 times guaranteed
	Between R0E521000EPB00 or R0E521000CPE00 and R0E521237CFK00: 50 times guaranteed

## 4. Usage (See Figure 2)

The R0E521237CFK00 can be used for debugging and board mounted evaluation in common by mounting the NQPACK048SD on the user system.

- (1) For debugging  
Mount the NQPACK048SD and YQPACK048SD on the foot pattern of the user system in that order. And fix them with the YQ-GUIDE's (do not use the screws included with the YQPACK048SD).  
After connecting the R0E521000EPB00 or R0E521000CPE00 and R0E521237CFK00, connect the R0E521237CFK00 to the YQPACK048SD.
- (2) For onboard evaluation  
Mount an R8C/20, 21, 22 and 23 Groups MCU and HQPACK048SD (separately available) in that order on the NQPACK048SD on the user system. And fix them using a screw included with the HQPACK048SD.

Before using the R0E521237CFK00, be sure to read "7. Precautions" on page 4 and the R0E521000EPB00 or R0E521000CPE00 User's Manual.

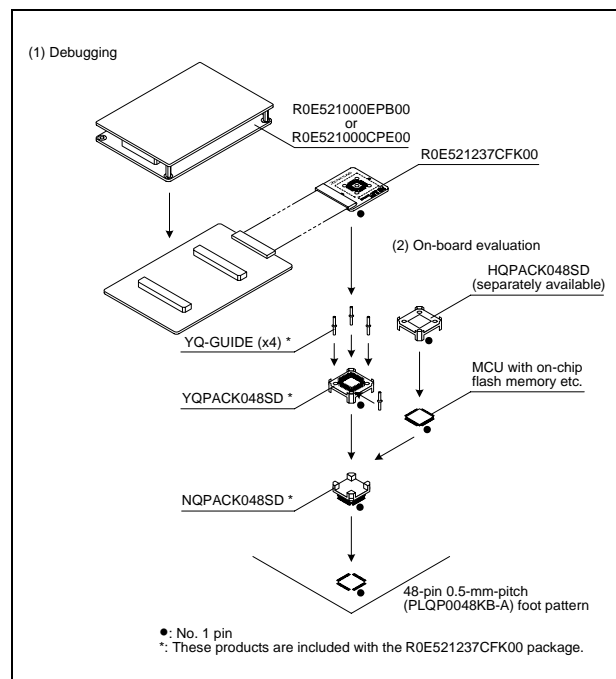


Figure 2 Usage of the R0E521237CFK00

## 5. Connection Procedure (See Figure 3)

The procedure for connecting the R0E521237CFK00 is shown below.

- (1) Mount the NQPACK048SD on the user system.
- (2) Attach the YQPACK048SD on the NQPACK048SD.
- (3) Secure the four corners of the YQPACK048SD with the YQ-GUIDE's.

- Do not use the screws included with the YQPACK048SD for fixing the YQPACK048SD.
- The screwdriver included with the NQPACK048SD is used for fixing the HQPACK048SD. Do not use it for fixing the YQ-GUIDE's.

- (4) Attach the R0E521000EPB00 or R0E521000CPE00 to the R0E521237CFK00.
- (5) Attach the R0E521237CFK00 to the YQPACK048SD.

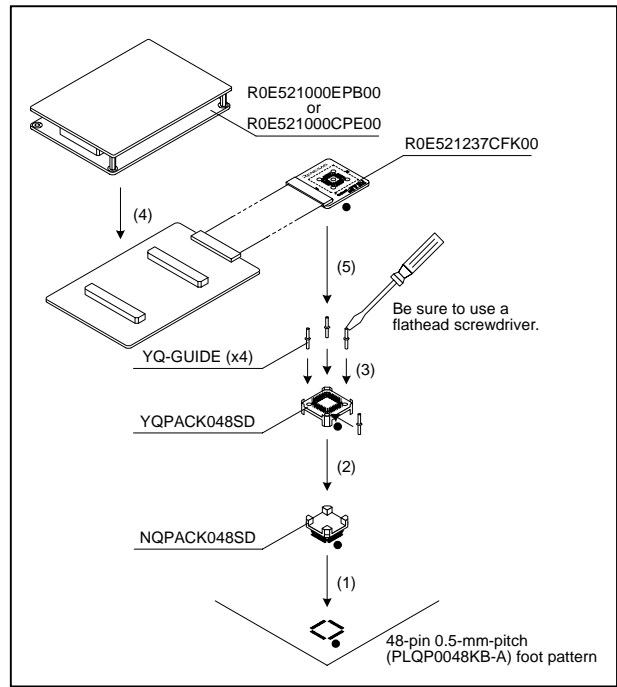


Figure 3 Connection procedure of the R0E521237CFK00

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

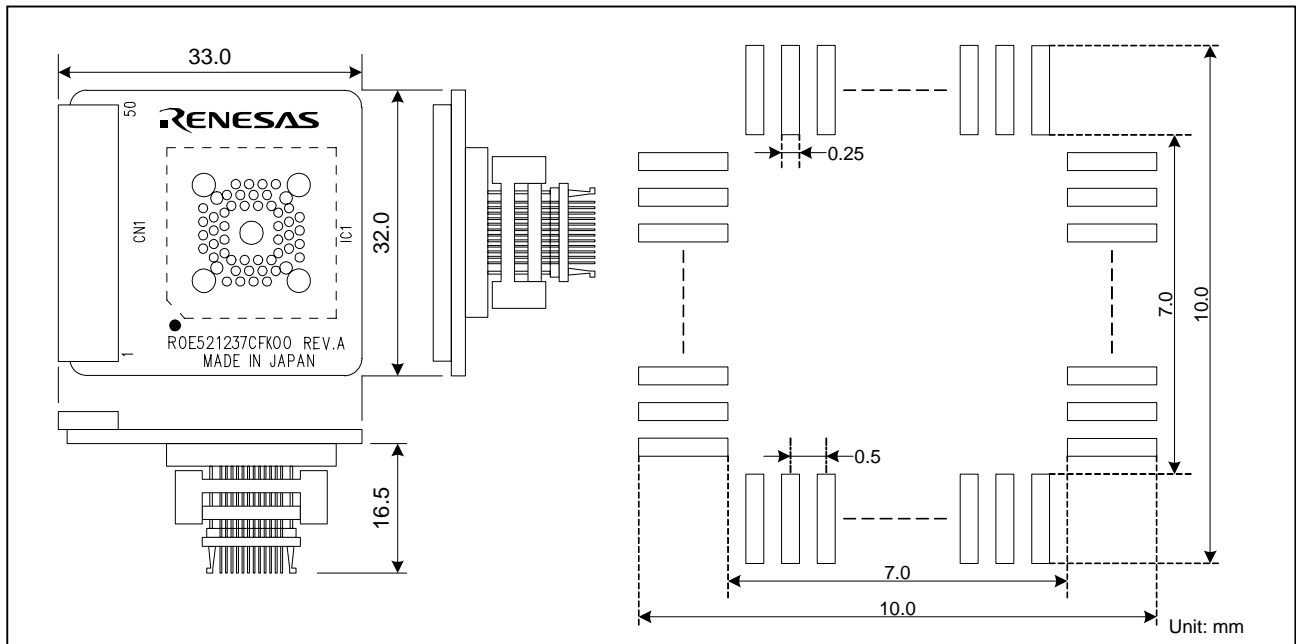


Figure 4 External dimensions and a sample foot pattern of the R0E521237CFK00

## 7. Precautions

### CAUTION

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



- Do not pull or excessively flex the cable. The cable may cause a break.
- When connecting the YQPACK048SD, be sure to use the included YQ-GUIDE's.
- Do not use the screws included with the YQPACK048SD to fix it.

### IMPORTANT

#### Notes on This Product:

- We cannot accept any request for repair.
- For purchasing the NQPACK048SD, YQPACK048SD and HQPACK048SD, contact the following:  
Daimaru Kogyo Ltd. <http://www.daimarukogyo.co.jp/>  
Tokyo Eletech Corporation [http://www.tetc.co.jp/e\\_tet.htm](http://www.tetc.co.jp/e_tet.htm)
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