

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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# M38C29T-64FPD

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

## User's Manual

Keep safety first in your circuit designs!

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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>

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Renesas Technology

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## 1. Outline

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

## 2. Package Components

- (1) M38C29T-64FPD x1
- (2) TQSOCKET064SDG x1
- (3) TQPACK064SD x1
- (4) M38C29T-64FPD User's Manual (This manual) x1

\* When using the M38C29T-64FPD, mount the included IC socket.

64-pin QFP socket TQPACK064SD  
(made by Tokyo Eletech Corporation)

## 3. Specifications

Table 1 Specifications

Applicable package	64P6Q-A (64-pin 0.5-mm-pitch LQFP)
Insertion/removal iterations of connector	100 times or less guaranteed

## 4. Usage

### 4.1 Oscillator Circuit

The M38C29T-64FPD has two kinds of oscillator circuit patterns for the main clock XIN and the sub clock XCIN.

Depending on the configuration of an oscillator circuit on the target system use them as follows.

- (1) To use the internal oscillator circuit of the MCU  
Because the converter board exists between the emulator MCU and the target system, the oscillator on the target board may not be able to oscillate. In this case, mount an oscillator circuit on an oscillator circuit pattern (see Figures 2 and 3) of the M38C29T-64FPD. And, to confirm its oscillation, check output waveforms of pins XOUT and XCOU using an oscilloscope.
- (2) To use an oscillator module IC  
You do not need to mount an oscillator circuit on oscillator circuit pattern of the M38C29T-64FPD.

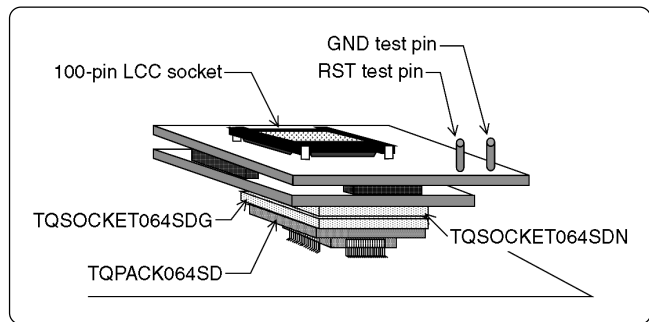


Figure 1 External view of the M38C29T-64FPD

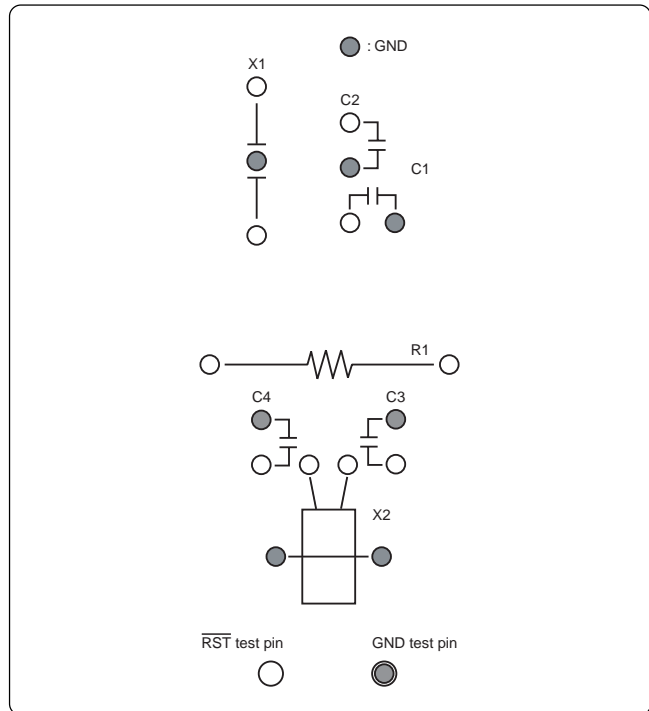


Figure 2 Parts layout of oscillator circuits

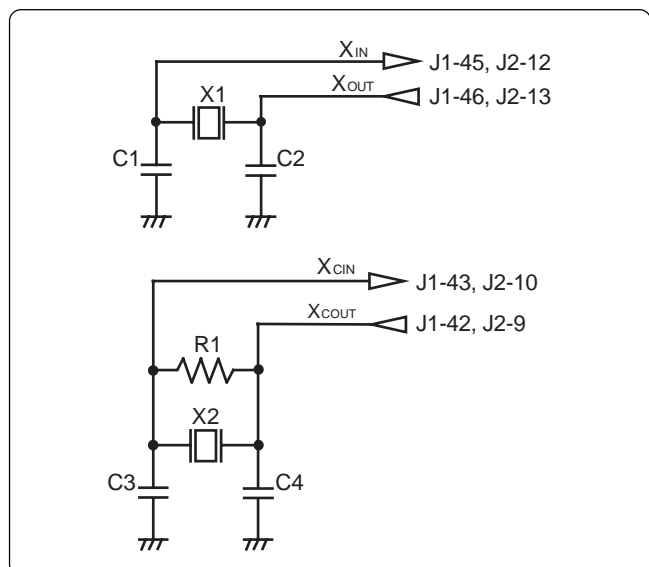


Figure 3 Connection diagrams of the oscillator circuits

## 4.2 Connecting to Target System

Connect the M38C29T-64FPD to the target system as follows.

- (1) Mount the TQPACK064SD on the target system.
- (2) Attach the TQSOCKET064SDG to the TQPACK064SD.
- (3) Attach the J2 (TQSOCKET064SDN) of the M38C29T-64FPD to the TQSOCKET064SDG.

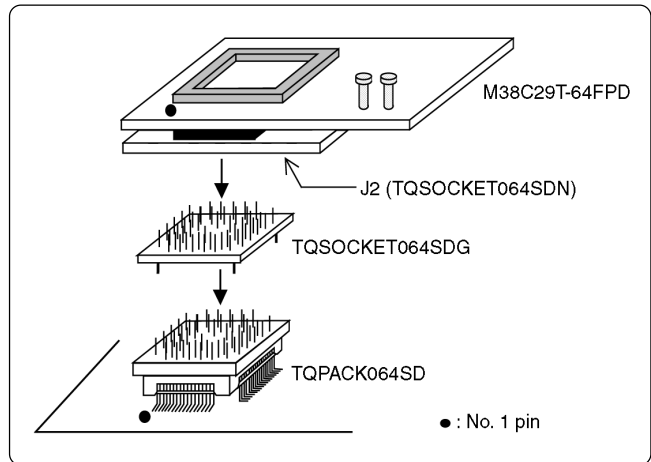


Figure 4 Connecting to the target system

## 5. External Dimensions of the M38C29T-64FPD

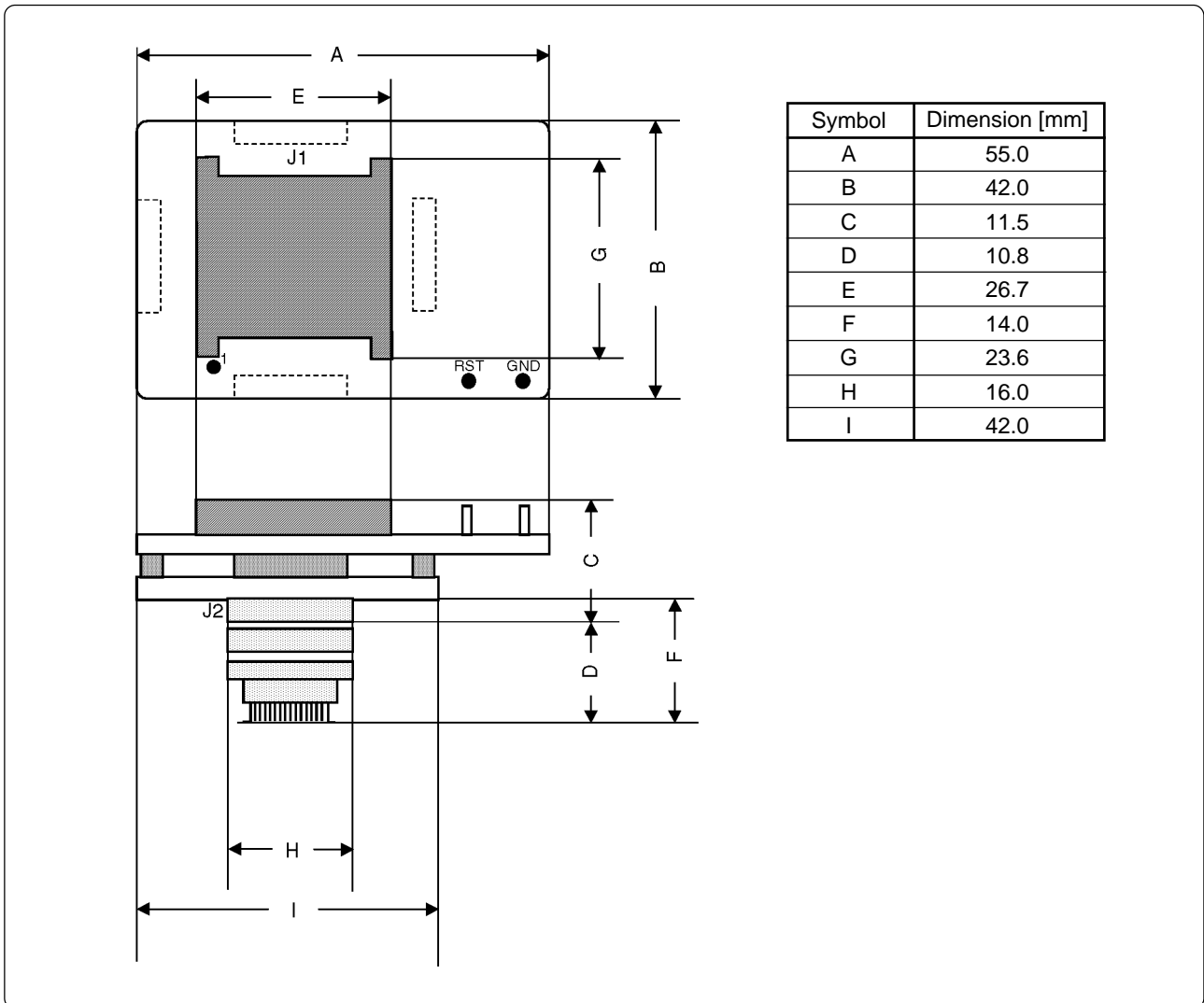


Figure 5 External dimensions of the M38C29T-64FPD

## 6. Precautions

### CAUTION

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



- Before mounting the M38C29T-64FPD, be sure to check the pin positions.

### IMPORTANT

#### Notes on This Product:

- We cannot accept any request for repair.
- To purchase the TQPACK064SD and TQSOCKET064SDG for replacement, contact the following.  
Tokyo Eletech Corporation  
[http://www.tetc.co.jp/e\\_tet.htm](http://www.tetc.co.jp/e_tet.htm)
- For inquiries about this product or the contents of this manual, contact your local distributor.  
Renesas Tools Homepage <http://www.renesas.com/en/tools>

## 7. Correspondence of the Connectors

Table 2 Correspondence of connectors J1 and J2

J1 connector Pin No.	J2 connector Pin No.	J1 connector Pin No.	J2 connector Pin No.	J1 connector Pin No.	J2 connector Pin No.	J1 connector Pin No.	J2 connector Pin No.
1	-	26	-	51	-	76	-
2	-	27	-	52	-	77	-
3	-	28	-	53	-	78	-
4	-	29	-	54	-	79	-
5	-	30	-	55	-	80	-
6	-	31	-	56	-	81	-
7	-	32	-	57	-	82	-
8	49	33	1	58	17	83	33
9	50	34	2	59	18	84	34
10	51	35	3	60	19	85	35
11	52	36	4	61	20	86	36
12	53	37	5	62	21	87	37
13	54	38	6	63	22	88	38
14	55	39	7	64	23	89	39
15	56	40	-	65	24	90	40
16	57	41	8	66	25	91	41
17	58	42	9	67	26	92	42
18	59	43	10	68	27	93	43
19	60	44	11	69	28	94	44
20	61	45	12	70	29	95	45
21	62	46	13	71	30	96	46
22	63	47	14	72	31	97	47
23	64	48	15	73	32	98	48
24	-	49	16	74	-	99	-
25	-	50	-	75	-	100	-

("-": No connection)