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April 1st, 2010
Renesas Electronics Corporation

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M38C29T-64LCA

Converter Board for Connecting 100-pin RFS Type Emulator MCU to 64-pin 0.8-mm-pitch QFP/LQFP
(for 38000 Series 38C1, 38C2, 38K0 and 38K2 Groups)

User's Manual

Notes regarding these materials

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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/tools>

1. Outline

The M38C29T-64LCA is a converter board which connects the 100-pin RFS type emulator MCU (M38C13RLFS, M38C29RLFS, M38K09RFS, M38K29RFS) to a foot pattern for 64-pin 0.8-mm-pitch QFP (PRQP0064GA-A) and 64-pin 0.8-mm-pitch LQFP (PLQP0064GA-A).

2. Package Components

- (1) M38C29T-64LCA x1
 - (2) M38C29T-64LCA User's Manual (This manual) x1
- * When using the M38C29T-64LCA, the following IC socket is required. Purchase it separately.
- 64-pin LCC socket
 - IC61-0644-088: manually soldering type (made by Yamaichi Electronics Co., Ltd.)

3. Specifications

Table 1 Specifications

Applicable package	PRQP0064GA-A (former name:64P6N-A) (64-pin 0.8-mm-pitch QFP)
	PLQP0064GA-A (former name:64P6U-A) (64-pin 0.8-mm-pitch LQFP)

4. Usage

4.1 Oscillator Circuit

The M38C29T-64LCA 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 user 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 user system, the oscillator on the user system 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-64LCA. 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-64LCA.

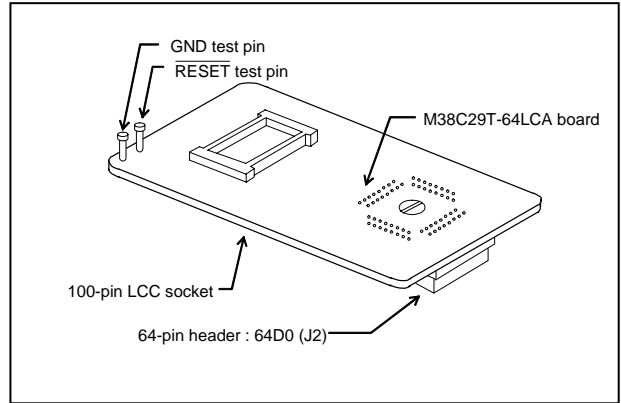


Figure 1 External view of the M38C29T-64LCA

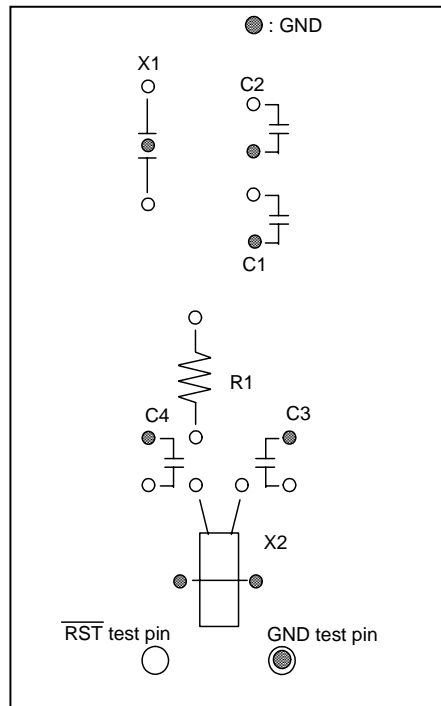


Figure 2 Parts layout of oscillator circuits

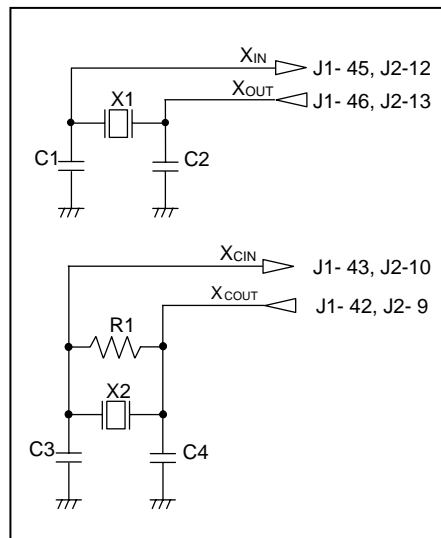


Figure 3 Connection diagrams of the oscillator circuits

4.2 Connecting to User System

Connect the M38C29T-64LCA to the user system as follows.

- (1) Set the head of the screw for releasing the LCC socket at "LOCK" on the board as shown in Figure 4. Turn the screw until it clicks.
- (2) Mount the 64-pin header of the M38C29T-64LCA to the 64-pin LCC socket aligning the polarizing pin.
- (3) The 64-pin header and 64-pin LCC socket are rated at 50 mate/demate cycles.

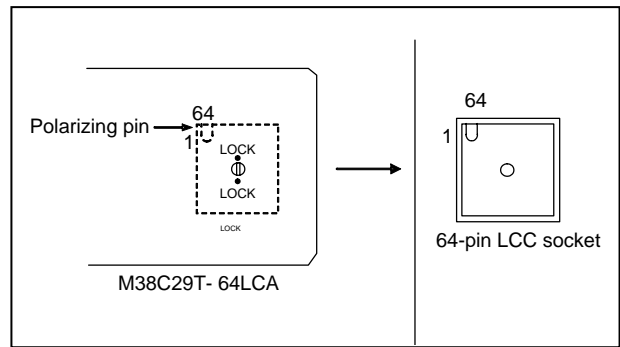


Figure 4 Connecting to the user system

4.3 Removing from User System

Remove the M38C29T-64LCA from the user system as follows.

- (1) Turn the screw for releasing the LCC socket clockwise as shown in Figure 5.
- (2) The M38C29T-64LCA is pushed out from the 64-pin LCC socket.
- (3) After the socket is removed, turn the screw until it clicks.

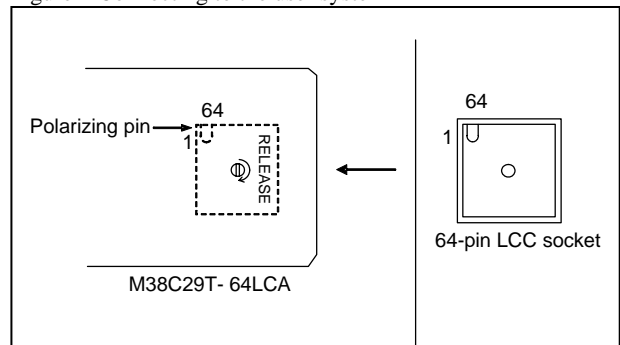


Figure 5 Removing from the user system

5. External Dimensions of the M38C29T-64LCA

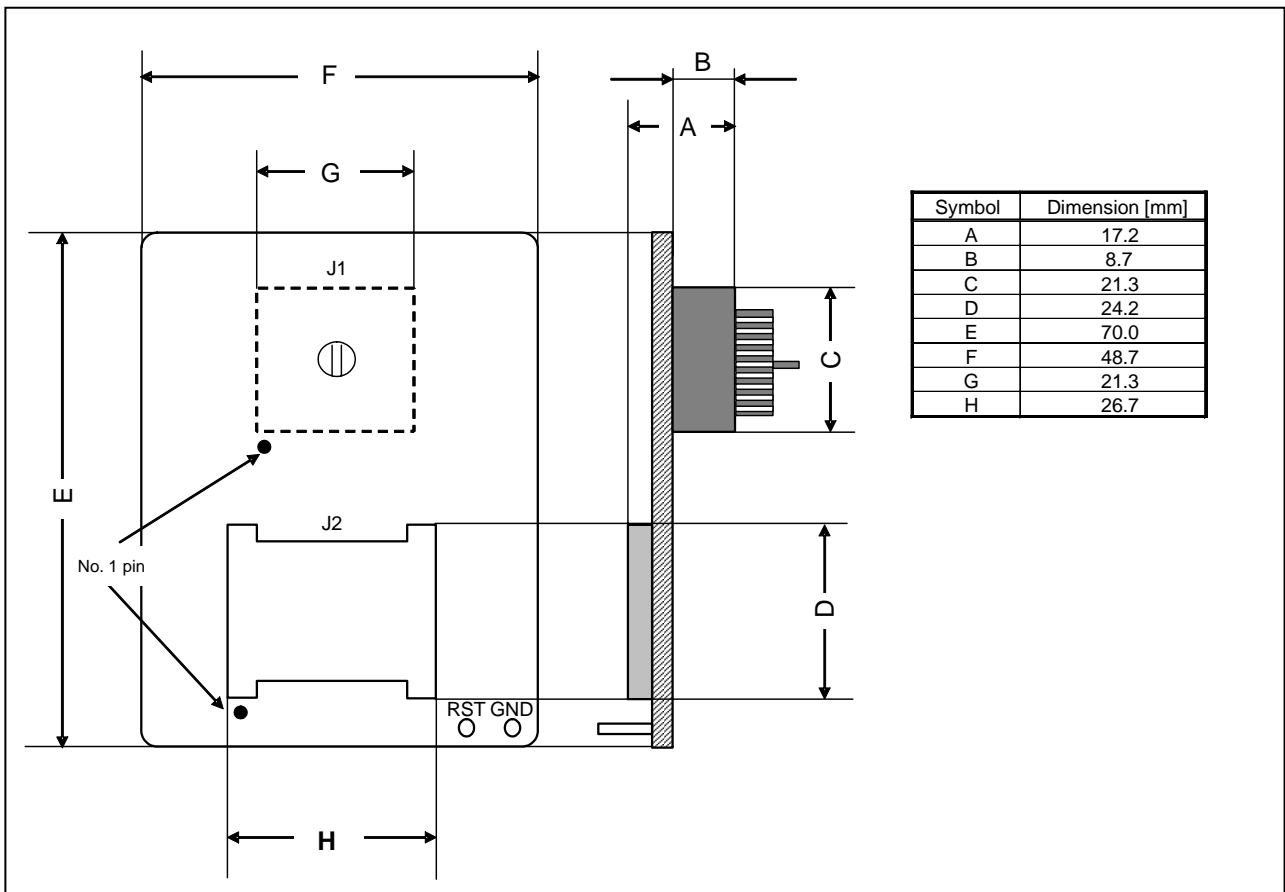


Figure 6 External dimensions of the M38C29T-64LCA

6. Precautions

⚠ CAUTION

Cautions to Be Taken for This Product:



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

IMPORTANT

Notes on This Product:

- We cannot accept any request for repair.
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 Renesas Tools Homepage <http://www.renesas.com/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)