To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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

April 1st, 2010
Renesas Electronics Corporation

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

Send any inquiries to http://www.renesas.com/inquiry.

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RENESAS TECHNICAL UPDATE

<table>
<tr><td>Classification of Production</td><td colspan="3">MPU & MCU</td><td>No.</td><td>TN-H8*-256A/E</td><td>Rev.</td><td>1</td></tr>
<tr><td>THEME</td><td colspan="2">Update to HD64F38024R</td><td>Classification of Information</td><td colspan="4">1. Spec change
2. Supplement of Documents
3. Limitation of Use
④ Change of Mask
5. Change of Production Line</td></tr>
<tr><td rowspan="2">PRODUCT NAME</td><td rowspan="2">HD64F38024
HD64F38024R</td><td>Lot No.</td><td rowspan="2">Reference Documents</td><td colspan="2" rowspan="2">H8/38024, H8/38024S, H8/38024 F-ZTAT Group Hardware Manual
REJ09B0042-0400O</td><td>Term of Validity</td></tr>
<tr><td>All</td><td>Permanent</td></tr>
</table>

We request you make the following adjustments to the current product, HD64F38024 to update to the HD64F38024R. The below describes usage notes of the HD64F38024 along with updated contents of the HD64F38024R.

Port 5 Functions (Referring to Section 5.3.1, Transition to Standby Mode):

- HD64F38024 Usage Notes

When using port 5 as output pins, an output state is held in standby mode.

- HD64F38024R Corrective Measures

Under the above stated condition, the output state of port 5 becomes a high impedance state.

Port 9 Step-Up Circuit (Referring to Section 8.9.2, Register Configuration and Description):

- HD64F38024 Usage Notes

When the PIOFF bit in the port mode register 9 (PMR9) is 1 and the port data register 9 (PDR9) is rewritten to 0, charging and discharging is repeated inside the step-up circuit. This causes an increase in power consumption. At this time power consumption increases by 10 μA to 100 μA more than normal. When in this state if it makes a transition to watch mode or standby mode, the LSI power consumption increases.

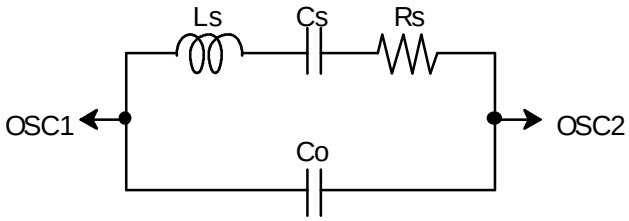
- HD64F38024R Corrective Measures

With the HD64F38024R corrective measures the above problem is not generated.

Electrical Characteristics (AC Characteristics) Oscillation Stabilization Time (trc) (Referring to Section 14.4.3, AC Characteristics, Table 14.9):

- HD64F38024

Item	Symbol	Applicable Pins	Test Condition	Values			Unit	Reference Figure
				Min.	Typ.	Max.		
Oscillation stabilization time	trc	OSC1, OSC2	Figure 14.8 (crystal oscillator)	—	2.0	6.0	ms	Figure 14.8
			Figure 14.8 (ceramic oscillator)	—	20	45	µs	Figure 14.8
			Except the above	—	—	50	ms	



Crystal Resonator Parameter

Frequency (MHz)	4	4.193	10
Rs (max)	100 Ω	100 Ω	30 Ω
Co (max)	16pF	16pF	16pF

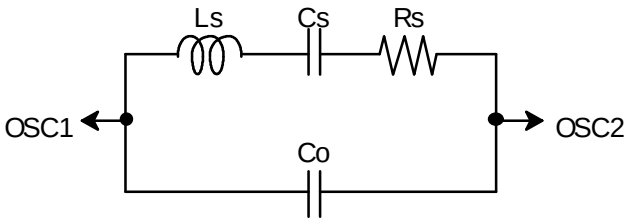
Ceramic Resonator Parameter

Frequency (MHz)	2	4	10
Rs (max)	18.3 Ω	6.8 Ω	4.6 Ω
Co (max)	36.94pF	36.72pF	32.31pF

Figure 14.8 Resonator Equivalent Circuit

- HD64F38024R

Item	Symbol	Applicable Pins	Test Condition	Values Min.	Values Typ.	Values Max.	Unit	Reference Figure
Oscillation stabilization time	trc	OSC1, OSC2	Figure 14.9 (crystal oscillator)	—	**0.8**	**2.0**	ms	Figure 14.9
			Figure 14.9 (ceramic oscillator)	—	20	45	µs	Figure 14.9
			Except the above	—	—	50	ms	



Crystal Resonator Parameter (Manufacturer Nominal Value)

Frequency (MHz)	4	Manufacturer
Rs (max)	100 Ω	NIHON DEMPA KOGYO CO., LTD.
Co (max)	16pF	

Ceramic Resonator Parameter (1) (Manufacturer Nominal Value)

Frequency (MHz)	2	Manufacturer
Rs (max)	18.3 Ω	Murata Manufacturing Co., Ltd.
Co (max)	36.94pF	

Ceramic Resonator Parameter (2) (Manufacturer Nominal Value)

Frequency (MHz)	10	Manufacturer
Rs (max)	4.6 Ω	Murata Manufacturing Co., Ltd.
Co (max)	32.31pF	

Figure 14.9 Resonator Equivalent Circuit

Electrical Characteristics (LCD Characteristics) LCD Power Supply Split-Resistance (R_{LCD}) (Referring to Section 14.4.5, LCD Characteristics, Table 14.12):

- HD64F38024

Item	Symbol	Applicable Pins	Test Conditions	Values Min.	Values Typ.	Values Max.	Unit	Remarks
LCD power supply split-resistance	R_{LCD}		Between V1 and Vss	0.5	3.0	9.0	MΩ	

- HD64F38024R

Item	Symbol	Applicable Pins	Test Conditions	Values Min.	Values Typ.	Values Max.	Unit	Remarks
LCD power supply split-resistance	R_{LCD}		Between V1 and Vss	**1.5**	3.0	**7.0**	MΩ	