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)

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HITACHI SEMICONDUCTOR TECHNICAL UPDATE

Classification of Production	MCU			No	TN-MC*-002A/E	Rev	1
THEME	F-ZTAT Specification Change		Classification of Information	① Spec change 2. Supplement of Documents 3. Limitation of Use 4. Change of Mask 5. Change of Production Line			
PRODUCT NAME	Product list attached	Lot No. All	Reference Documents	H8 Series, H8S Series, SH Series F-ZTAT Hardware Manual		Effective Date Permanent	

We would like to inform you specification changes of 0.35um F-ZTAT microcontroller.

1. 0.35mF-ZTAT specification changes

1.1 Before change (current spec)

		min.	typ.	max.	unit
Rewrite times (Reprogramming count to flash memory)	N_{WEC}	-	-	100	cycles

1.2 After change (new spec.)

■H8/300H Tiny series, Super-low-power series

(standard specification only)

		min.	typ.	max.	unit
Rewrite times	N_{WEC}	1,000 1)	10,000 2)	-	cycles
Data retention period	t_{DRP} 3)	10	-	-	years

■The other 0.35um F-ZTAT products. (standard specification only)

		min.	typ.	max.	unit
Rewrite times	N_{WEC}	100 1)	10,000 2)	-	cycles
Data retention period	t_{DRP} 3)	10	-	-	years

1) Minimum cycle value which guarantees all characteristics after rewriting. (Rewrite cycles from 1 to minimum value are guaranteed.)
2) Reference characteristics at 25°C. (This is a indication that rewrite operation can normally function up to this figure.)
3) Data retention characteristics when rewrite performed correctly within specification value including minimum data retention period.

Refer to the attached product list for details of applied products.

2. Applied date

Now.

(Apply to hardware manuals since next revision)

P/N	Write/Erase Cycle(NWEC min)	Write/Erase Cycle(NWEC typ)	Data Retention Period(tDRP) (year)	remark
HD64F38024F	1,000	10,000	10	
HD64F38024H	1,000	10,000	10	
HD64F38024W	1,000	10,000	10	

P/N	Write/Erase Cycle(NWEC min)	Write/Erase Cycle(NWEC typ)	Data Retention Period(tDRP) (year)	remark
HD64F3664BP	1,000	10,000	10	
HD64F3664FP	1,000	10,000	10	
HD64F3664FX	1,000	10,000	10	
HD64F3664FY	1,000	10,000	10	
HD64F3664H	1,000	10,000	10	
HD64N3664FP	1,000	10,000	10	
HD64F3672FP	1,000	10,000	10	
HD64F3672FX	1,000	10,000	10	
HD64F3670FP	1,000	10,000	10	
HD64F3670FX	1,000	10,000	10	
HD64F3687H	1,000	10,000	10	
HD64F3687FP	1,000	10,000	10	
HD64F3687GH	1,000	10,000	10	
HD64F3687GFP	1,000	10,000	10	
HD64F3684H	1,000	10,000	10	
HD64F3684FP	1,000	10,000	10	
HD64F3684GH	1,000	10,000	10	
HD64F3684GFP	1,000	10,000	10	
HD64F3694FY	1,000	10,000	10	
HD64F3694FX	1,000	10,000	10	
HD64F3694FP	1,000	10,000	10	
HD64F3694H	1,000	10,000	10	
HD64F3694GFY	1,000	10,000	10	
HD64F3694GFX	1,000	10,000	10	
HD64F3694GFP	1,000	10,000	10	
HD64F3694GH	1,000	10,000	10	

P/N	Write/Erase Cycle(NWEC min)	Write/Erase Cycle(NWEC typ)	Data Retention Period(tDRP) (year)	remark
HD64F3052BF25	100	10,000	10	
HD64F3052BX25	100	10,000	10	
HD64F3068F25	100	10,000	10	
HD64F3068X25	100	10,000	10	
HD64F3028F25	100	10,000	10	
HD64F3028TE25	100	10,000	10	
HD64F3064BF25	100	10,000	10	
HD64F3064BX25	100	10,000	10	
HD64F3026F25	100	10,000	10	
HD64F3026TE25	100	10,000	10	
HD64F3062BF25	100	10,000	10	
HD64F3062BX25	100	10,000	10	
HD64F3024F25	100	10,000	10	
HD64F3024TE25	100	10,000	10	
HD64F3048BF25	100	10,000	10	
HD64F3048BVF25	100	10,000	10	
HD64F3048BX25	100	10,000	10	
HD64F3048BVX25	100	10,000	10	

P/N	Write/Erase Cycle(NWEC min)	Write/Erase Cycle(NWEC typ)	Data Retention Period(tDRP) (year)	remark
HD64F2676VFC33	100	10,000	10	
HD64F2667VFQ33	100	10,000	10	
HD64F2377VFQ33	100	10,000	10	
HD64F2377RVFQ33	100	10,000	10	
HD64F2367VF33	100	10,000	10	
HD64F2367VTE33	100	10,000	10	
HD64F2339VFC25	100	10,000	10	
HD64F2339EVFC25	100	10,000	10	
HD64F2338VFC25	100	10,000	10	
HD64F2326VF25	100	10,000	10	
HD64F2326VTE25	100	10,000	10	
HD64F2329VF25	100	10,000	10	
HD64F2329EVF25	100	10,000	10	
HD64F2329VTE25	100	10,000	10	
HD64F2329EVTE25	100	10,000	10	
HD64F2329BVF25	100	10,000	10	
HD64F2329BVTE25	100	10,000	10	
HD64F2398F20	100	10,000	10	
HD64F2398TE20	100	10,000	10	
HD64F2328VF25	100	10,000	10	
HD64F2328VTE25	100	10,000	10	
HD64F2319EVF25	100	10,000	10	
HD64F2319EVTE25	100	10,000	10	
HD64F2319VF25	100	10,000	10	
HD64F2319VTE25	100	10,000	10	
HD64F2315VF25	100	10,000	10	
HD64F2315VTE25	100	10,000	10	
HD64F2318VF25	100	10,000	10	
HD64F2318VTE25	100	10,000	10	
HD64F2317VF25	100	10,000	10	
HD64F2317VTE25	100	10,000	10	
HD64F2227TE13	100	10,000	10	
HD64F2227TF13	100	10,000	10	
HD64F2268FA13	100	10,000	10	
HD64F2268TE13	100	10,000	10	
HD64F2268TF13	100	10,000	10	
HD64F2268FA20	100	10,000	10	
HD64F2268TE20	100	10,000	10	
HD64F2268TF20	100	10,000	10	
HD64F2258F13	100	10,000	10	
HD64F2258TE13	100	10,000	10	
HD64F2258FA13	100	10,000	10	
HD64F2239FA16	100	10,000	10	
HD64F2239TE16	100	10,000	10	
HD64F2239TF16	100	10,000	10	
HD64F2238RFA13	100	10,000	10	
HD64F2238RTE13	100	10,000	10	
HD64F2238RTF13	100	10,000	10	
HD64F2238RBP13	100	10,000	10	
HD64F2238RFA6	100	10,000	10	
HD64F2238RTE6	100	10,000	10	
HD64F2238RTF6	100	10,000	10	

P/N	Write/Erase Cycle(NWEC min)	Write/Erase Cycle(NWEC typ)	Data Retention Period(tDRP) (year)	remark
HD64F2238RBP6	100	10,000	10	
HD64F2238BF13	100	10,000	10	
HD64F2238BFA13	100	10,000	10	
HD64F2238BTE13	100	10,000	10	
HD64F2238BTF13	100	10,000	10	
HD64F2215TE16	100	10,000	10	
HD64F2215BP16	100	10,000	10	
HD64F2215UTE16	100	10,000	10	
HD64F2215UBR16	100	10,000	10	
HD64F2214TE16	100	10,000	10	
HD64F2214TF16	100	10,000	10	
HD64F2214BP16	100	10,000	10	
HD64F2633F25	100	10,000	10	
HD64F2633TE25	100	10,000	10	
HD64F2643FC25	100	10,000	10	
HD64F2158VBP25	100	10,000	10	
HD64F2158VTE25	100	10,000	10	
HD64F2169AVTE10	100	10,000	10	
HD64F2161BVTE10	100	10,000	10	
HD64F2160BVTE10	100	10,000	10	
HD64F2141BVFA10	100	10,000	10	
HD64F2141BVTE10	100	10,000	10	
HD64F2140BVFA10	100	10,000	10	
HD64F2140BVTE10	100	10,000	10	
HD64F2145BVTE10	100	10,000	10	
HD64F2148BFA20	100	10,000	10	
HD64F2148BVFA10	100	10,000	10	
HD64F2148BTE20	100	10,000	10	
HD64F2148BVTE10	100	10,000	10	
HD64F2148AFA20	100	10,000	10	
HD64F2148AVFA10	100	10,000	10	
HD64F2148ATE20	100	10,000	10	
HD64F2148AVTE10	100	10,000	10	
HD64F2147AFA20	100	10,000	10	
HD64F2147AVFA10	100	10,000	10	
HD64F2147ATE20	100	10,000	10	
HD64F2147AVTE10	100	10,000	10	
HD64F2144AFA20	100	10,000	10	
HD64F2144AVFA10	100	10,000	10	
HD64F2144ATE20	100	10,000	10	
HD64F2144AVTE10	100	10,000	10	
HD64F2138AFA20	100	10,000	10	
HD64F2138AVFA10	100	10,000	10	
HD64F2138ATF20	100	10,000	10	
HD64F2138AVTF10	100	10,000	10	
HD64F2134AFA20	100	10,000	10	
HD64F2134AVFA10	100	10,000	10	
HD64F2134ATF20	100	10,000	10	
HD64F2134AVTF10	100	10,000	10	
HD64F2199F	100	10,000	10	
HD64F2199RF	100	10,000	10	
HD64F2194CF	100	10,000	10	
HD64F2194F	100	10,000	10	

P/N	Write/Erase Cycle(NWEC min)	Write/Erase Cycle(NWEC typ)	Data Retention Period(tDRP) (year)	remark
HD64F7046F50	100	10,000	10	
HD64F7047F50	100	10,000	10	
HD64F7144F50	100	10,000	10	
HD64F7145F50	100	10,000	10	
HD64F7065AF60	100	10,000	10	