

To our customers,

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## Old Company Name in Catalogs and Other Documents

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On April 1<sup>st</sup>, 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>

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Renesas Electronics Corporation

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# RENESAS TECHNICAL NEWS

No. 4500-06-0304

## Correction of 4583/4584 Group Datasheets

### Classification

▼ Corrections and supplementary  
expl anation of document

Notes

Knowhow

Others

### Concerned Products

M34583EDFP

M34584EDFP

The following errors exist in “4583 Group Datasheet Rev.1.0” and “4584 Group Datasheet Rev.1.0”.  
Please refer to the following corrected information.

### (1) RECOMMENDED OPERATING CONDITIONS 1

4583Group:P141

4584Group:P145

### Error

Symbol	Parameter	Conditions	Limits			Unit
			Max.	Min.	Typ.	
V <sub>DD</sub>	Supply voltage (when quartz-crystal oscillator is used)	$f(X_{IN}) \leq 50$ kHz	2.0		5.5	V
V <sub>RAM</sub>	RAM back-up voltage	at RAM back-up mode	1.6			V

### Correction

Symbol	Parameter	Conditions	Limits			Unit	
			Max.	Min.	Typ.		
V <sub>DD</sub>	Supply voltage (when quartz-crystal oscillator is used)	Mask ROM version	$f(X_{IN}) \leq 50$ kHz	2.0		5.5	V
		One Time PROM version	$f(X_{IN}) \leq 50$ kHz	2.5		5.5	
V <sub>RAM</sub>	RAM back-up voltage (at RAM back-up mode)	Mask ROM version		1.6			V
		One Time PROM version		2.0			

**(2) RECOMMENDED OPERATING CONDITIONS 3**

4583Group:P143

4584Group:P147

**Error**

Symbol	Parameter	Conditions	Limits			Unit
			Max.	Min.	Typ.	
f(X <sub>IN</sub> )	Oscillation frequency (with a quartz-crystal oscillator)	V <sub>DD</sub> = 2.0 to 5.5 V			50	kHz

**Correction**

Symbol	Parameter	Conditions	Limits			Unit	
			Max.	Min.	Typ.		
f(X <sub>IN</sub> )	Oscillation frequency (with a quartz-crystal oscillator)	Mask ROM version	V <sub>DD</sub> = 2.0 to 5.5 V			50	kHz
		One Time PROM version					

**(3) A-D CONVERTER RECOMMENDED OPERATING CONDITIONS**

4583Group:P146

4584Group:P150

**Error**

Symbol	Parameter	Conditions	Limits			Unit	
			Max.	Min.	Typ.		
V <sub>DD</sub>	Supply voltage	One Time PROM version	2.5		5.5	V	
f(ADCK)	A-D conversion clock Frequency (Note)	One Time PROM version	V <sub>DD</sub> = 4.0 to 5.5 V	0.8		334	kHz
			V <sub>DD</sub> = 2.7 to 5.5 V	0.8		245	
			V <sub>DD</sub> = 2.5 to 5.5 V	0.8		15.3	

**Correction**

Symbol	Parameter	Conditions	Limits			Unit	
			Max.	Min.	Typ.		
V <sub>DD</sub>	Supply voltage	One Time PROM version	3.0		5.5	V	
f(ADCK)	A-D conversion clock Frequency (Note)	One Time PROM version	V <sub>DD</sub> = 4.0 to 5.5 V	0.8		334	kHz
			V <sub>DD</sub> = 3.0 to 5.5 V	0.8		123	

**(4) A-D CONVERTER CHARACTERISTICS**

4583Group:P147

4584Group:P151

**Error**

Symbol	Parameter	Conditions	Limits			Unit	
			Min.	Typ.	Max.		
-	Linearity error	$2.7\text{ V} \leq V_{DD} \leq 5.5\text{ V}$			$\pm 2$	LSB	
		$2.2\text{ (2.5) V} \leq V_{DD} < 2.7\text{ V}$ ((): One Time PROM version)			$\pm 4$		
-	Differential non-linearity error	$2.2\text{ (2.5) V} \leq V_{DD} \leq 5.5\text{ V}$ ((): One Time PROM version)			$\pm 0.9$	LSB	
V <sub>0T</sub>	Zero transition voltage	One Time PROM version	V <sub>DD</sub> = 5.12V	TBD	TBD	TBD	mV
			V <sub>DD</sub> = 3.072V	TBD	TBD	TBD	
			V <sub>DD</sub> = 2.56V	TBD	TBD	TBD	
V <sub>FST</sub>	Full-scale transition voltage	One Time PROM version	V <sub>DD</sub> = 5.12V	TBD	TBD	TBD	mV
			V <sub>DD</sub> = 3.072V	TBD	TBD	TBD	
			V <sub>DD</sub> = 2.56V	TBD	TBD	TBD	
-	Comparator error (Note 2)	One Time PROM version	V <sub>DD</sub> = 5.12V			TBD	mV
			V <sub>DD</sub> = 3.072V			TBD	
			V <sub>DD</sub> = 2.56V			TBD	

**Correction**

Symbol	Parameter	Conditions	Limits			Unit	
			Min.	Typ.	Max.		
-	Linearity error	$2.7\text{ (3.0) V} \leq V_{DD} \leq 5.5\text{ V}$ ((): One Time PROM version)			$\pm 2$	LSB	
		Mask ROM version	$2.2\text{ V} \leq V_{DD} < 2.7\text{ V}$				$\pm 4$
-	Differential non-linearity error	$2.2\text{ (3.0) V} \leq V_{DD} \leq 5.5\text{ V}$ ((): One Time PROM version)			$\pm 0.9$	LSB	
V <sub>0T</sub>	Zero transition voltage	One Time PROM version	V <sub>DD</sub> = 5.12V	0	15	30	mV
			V <sub>DD</sub> = 3.072V	3	13	23	
V <sub>FST</sub>	Full-scale transition voltage	One Time PROM version	V <sub>DD</sub> = 5.12V	5100	5115	5130	mV
			V <sub>DD</sub> = 3.072V	3065	3075	3085	
-	Comparator error (Note 2)	One Time PROM version	V <sub>DD</sub> = 5.12V			$\pm 30$	mV
			V <sub>DD</sub> = 3.072V			$\pm 23$	