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Concerned Products:	Customer Notification	Date: 09. 08. 2001
		NEC-Electronics (Europe) GmbH LSI & Discrete Business Unit Technical Product Support
μPD780058GC-8BT, μPD780058YGC-8BT, μPD780058GK-9EU, μPD780058YGK-9EU, μPD780058GC(A)-8BT, μPD780058YGC(A)-8BT, μPD780058BGC-8BT, μPD780058BYGC-8BT, μPD780058BYGC(A)-8BT, μPD780058BGK-9EU, μPD780058BYGK-9EU, μPD780058BGC(A)-8BT	Technical report	Source Doc: SBB-T-15061
		Author: A. Twardy
Date of initial issue: Aug. 09th, 01		Doc. No.: TPS-LE-C-0D002-0
1st revision :		Doc. No.:
2nd revision :		

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(A) DESCRIPTION

Bug No.	Outline	Description																																																																																					
1	New mask orderings should be placed for the μ PD780058B devices from now on.	<p>1.1 Target products: μPD780058BGC-8BT, μPD780058BYGC-8BT, μPD780058BYGC(A)-8BT, μPD780058BGK-9EU, μPD780058BYGK-9EU, μPD780058BGC(A)-8BT</p> <p>1.2 The μPD780058B has been developed to improve the A/D converter operating voltage of the μPD780058. The products mentioned under 1.1 are available for mask ordering. Please place orders for new masking using the μPD780058B from now on.</p> <p>1.3 Details of the change from μPD780058 to μPD780058B. The AD converter operating voltage has been changed and the AD converter characteristics have been added.</p> <table border="1"> <thead> <tr> <th>Changes and Added Items</th> <th>μPD780058</th> <th>μPD780058B</th> </tr> </thead> <tbody> <tr> <td>AD converter operating voltage range</td> <td>Vdd = 2.7V to 5.5V</td> <td>Vdd = 1.8V to 5.5V</td> </tr> <tr> <td rowspan="2">Total conversion error (max.)</td> <td>Vdd = 2.7V to 5.5V</td> <td>+/- 0.6% FSR</td> </tr> <tr> <td>Vdd = 1.8V to 5.5V</td> <td>-</td> </tr> <tr> <td rowspan="2">Conversion time (min.)</td> <td>Vdd = 2.7V to 5.5V</td> <td>16 μs</td> </tr> <tr> <td>Vdd = 1.8V to 5.5V</td> <td>-</td> </tr> <tr> <td>Reference voltage</td> <td>$2.7V \leq AVREF0 \leq Vdd$</td> <td>$1.8V \leq AVREF0 \leq Vdd$</td> </tr> </tbody> </table> <p>REMARK: The changes mentioned above do not affect the electrical specifications and reliability, except for the addition of the AD converter characteristics due to the change of the operating voltage range. For further details please refer to the table below (AD converter characteristics).</p> <p>1.4 μPD780058B AD converter characteristics.</p> <p>(Ta = -40 to +85° C, VDD = 1.8V to 5.5V, AVSS = VSS = 0V)</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Symbol</th> <th>Conditions</th> <th>MIN.</th> <th>TYP.</th> <th>MAX.</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Resolution</td> <td></td> <td></td> <td>8</td> <td>8</td> <td>8</td> <td>Bits</td> </tr> <tr> <td rowspan="2">Overall error ^{NOTE 1}</td> <td></td> <td>$2.7V \leq AVREF0 \leq 5.5V$</td> <td></td> <td></td> <td>+/- 0.6</td> <td>%FSR</td> </tr> <tr> <td></td> <td>$1.8V \leq AVREF0 \leq 5.5V$</td> <td></td> <td></td> <td>+/- 1.4</td> <td>%FSR</td> </tr> <tr> <td rowspan="2">Conversion time</td> <td>TCONV1</td> <td>$2.7V \leq AVREF0 \leq 5.5V$</td> <td>16</td> <td></td> <td>100</td> <td>μs</td> </tr> <tr> <td>TCONV2</td> <td>$1.8V \leq AVREF0 \leq 5.5V$</td> <td>40</td> <td></td> <td>100</td> <td>μs</td> </tr> <tr> <td>Analog input voltage</td> <td>VIAN</td> <td></td> <td>AVss</td> <td></td> <td>AVREF0</td> <td>V</td> </tr> <tr> <td>Reference voltage</td> <td>AVREF0</td> <td></td> <td>1.8</td> <td></td> <td>VDD</td> <td>V</td> </tr> <tr> <td rowspan="2">AVREF0 current</td> <td rowspan="2">RREF</td> <td>When AD converter is operating ^{NOTE 2}</td> <td></td> <td>500</td> <td>1500</td> <td>μA</td> </tr> <tr> <td>When AD converter is not operating ^{NOTE 3}</td> <td></td> <td>0</td> <td>3</td> <td>μA</td> </tr> </tbody> </table> <p>NOTE 1. Value excluding the quantisation error (+/- 1/2 LSB). NOTE 2. Current flow through AVREF0 when bit 7 (CS) of the AD converter mode register (ADM) is 1. NOTE 3. Current flow through AVREF0 when bit 7 (CS) of the AD converter mode register (ADM) is 0.</p>	Changes and Added Items	μ PD780058	μ PD780058B	AD converter operating voltage range	Vdd = 2.7V to 5.5V	Vdd = 1.8V to 5.5V	Total conversion error (max.)	Vdd = 2.7V to 5.5V	+/- 0.6% FSR	Vdd = 1.8V to 5.5V	-	Conversion time (min.)	Vdd = 2.7V to 5.5V	16 μ s	Vdd = 1.8V to 5.5V	-	Reference voltage	$2.7V \leq AVREF0 \leq Vdd$	$1.8V \leq AVREF0 \leq Vdd$	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	Resolution			8	8	8	Bits	Overall error ^{NOTE 1}		$2.7V \leq AVREF0 \leq 5.5V$			+/- 0.6	%FSR		$1.8V \leq AVREF0 \leq 5.5V$			+/- 1.4	%FSR	Conversion time	TCONV1	$2.7V \leq AVREF0 \leq 5.5V$	16		100	μ s	TCONV2	$1.8V \leq AVREF0 \leq 5.5V$	40		100	μ s	Analog input voltage	VIAN		AVss		AVREF0	V	Reference voltage	AVREF0		1.8		VDD	V	AVREF0 current	RREF	When AD converter is operating ^{NOTE 2}		500	1500	μ A	When AD converter is not operating ^{NOTE 3}		0	3	μ A
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(B) History List

Revision	Part	Item	Modification
Initial issue			First release.