



MC9S08AC16 Data Sheet Errata

by: Microcontroller Solutions Group

This errata document describes corrections to the *MC9S08AC16 Data Sheet*, order number MC9S08AC16. For convenience, the addenda items are grouped by revision. Please check our website at <http://www.freescale.com> for the latest updates.

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1 Errata for Revision 6

Table 1. MC9S08AC16 Rev 6 Errata

Location	Description																								
Throughout	Remove references to stop1 mode since that mode isn't supported on this device																								
Table 1-1/Page 20	<div>Add 42 SDIP device to the Consumer and Industrial "AC" Devices section with the following details:</div> <table><tr><th>Feature</th><th>MC9S08AC16</th><th>MC9S08AC8</th></tr><tr><td>Pin quantity</td><td>42</td><td>42</td></tr><tr><td>ADC channels</td><td>8</td><td>8</td></tr><tr><td>TPM1 channels</td><td>4</td><td>4</td></tr><tr><td>TPM2 channels</td><td>2</td><td>2</td></tr><tr><td>TPM3 channels</td><td>2</td><td>2</td></tr><tr><td>KBI pins</td><td>6</td><td>6</td></tr><tr><td>GPIO pins</td><td>32</td><td>32</td></tr></table>	Feature	MC9S08AC16	MC9S08AC8	Pin quantity	42	42	ADC channels	8	8	TPM1 channels	4	4	TPM2 channels	2	2	TPM3 channels	2	2	KBI pins	6	6	GPIO pins	32	32
Feature	MC9S08AC16	MC9S08AC8																							
Pin quantity	42	42																							
ADC channels	8	8																							
TPM1 channels	4	4																							
TPM2 channels	2	2																							
TPM3 channels	2	2																							
KBI pins	6	6																							
GPIO pins	32	32																							
Figure 1-1/Page 21	<div>Change legend to the following:</div> <div>❑ = Not available on 32-, 42-, or 44-pin packages</div> <div>◯ = Not available on 32- or 42-pin packages</div> <div>⬆ = Not available on 32-pin packages</div> <div>◊ = Not available on MC9S08AWxxA devices</div>																								
Page 27	Add Figure # cross-reference to first sentence and add figure title under 42-Pin SDIP package.																								
Table 4-1/Page 42	In TPM3 overflow entry, row 3, change address from "0xFFC6:0xFFC" to "0xFFC6:0xFFC7"																								
Table 4-2/Page 44	<div>In row 0x001E, change "KBEDG7" to "0" as KBIP7 does not exist on this device</div> <div>In row 0x001F, change "KBIPE7" to "0" as KBIP7 does not exist on this device</div>																								
Page 81	Change second sentence from "...which include a total of 54 general-purpose I/O pins." to "...which include a total of 38 general-purpose I/O pins."																								
Figure 8-2/Page 132	<div>Change legend to the following:</div> <div>❑ = Not available on 32-, 42-, or 44-pin packages</div> <div>◯ = Not available on 32- or 42-pin packages</div> <div>⬆ = Not available on 32-pin packages</div> <div>◊ = Not available on MC9S08AWxxA devices</div>																								
Section 9.2/Page 159	<div>First paragraph, remove second sentence.</div> <div>Second paragraph, remove second sentence.</div> <div>Third paragraph, change KBIP7 to KBIP6.</div>																								
Section 9.3/Page 159	Change second buillet from "Four falling edge/low level or ..." to "Three falling edge/low level or.."																								
Figure 9-1/Page 160	<div>Change legend to the following:</div> <div>❑ = Not available on 32-, 42-, or 44-pin packages</div> <div>◯ = Not available on 32- or 42-pin packages</div> <div>⬆ = Not available on 32-pin packages</div> <div>◊ = Not available on MC9S08AWxxA devices</div>																								

Table 1. MC9S08AC16 Rev 6 Errata (continued)

Location	Description
Figure 10-1/Page 167	<p>Change legend to the following:</p> <p>□ = Not available on 32-, 42-, or 44-pin packages</p> <p>○ = Not available on 32- or 42-pin packages</p> <p>△ = Not available on 32-pin packages</p> <p>◇ = Not available on MC9S08AWxxA devices</p>
Figure 11-1/Page 198	<p>Change legend to the following:</p> <p>□ = Not available on 32-, 42-, or 44-pin packages</p> <p>○ = Not available on 32- or 42-pin packages</p> <p>△ = Not available on 32-pin packages</p> <p>◇ = Not available on MC9S08AWxxA devices</p>
Figure 12-1/Page 218	<p>Change legend to the following:</p> <p>□ = Not available on 32-, 42-, or 44-pin packages</p> <p>○ = Not available on 32- or 42-pin packages</p> <p>△ = Not available on 32-pin packages</p> <p>◇ = Not available on MC9S08AWxxA devices</p>
Figure 13-1/Page 234	<p>Change legend to the following:</p> <p>□ = Not available on 32-, 42-, or 44-pin packages</p> <p>○ = Not available on 32- or 42-pin packages</p> <p>△ = Not available on 32-pin packages</p> <p>◇ = Not available on MC9S08AWxxA devices</p>
Figure 14-1/Page 255	<p>Change legend to the following:</p> <p>□ = Not available on 32-, 42-, or 44-pin packages</p> <p>○ = Not available on 32- or 42-pin packages</p> <p>△ = Not available on 32-pin packages</p> <p>◇ = Not available on MC9S08AWxxA devices</p>

Table 1. MC9S08AC16 Rev 6 Errata (continued)

Location	Description																																																																
Page 288	<div>Add the following DC injection current specifications to the end of the DC Characteristics table.</div> <table><tr><th>Num</th><th>C</th><th>Parameter</th><th>Symbol</th><th>Min</th><th>Typ</th><th>Max</th><th>Unit</th></tr><tr><td>20</td><td>D</td><td>DC injection current^{1, 2, 3, 4}</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>Single pin limit</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>V_{IN} > V_{DD}</td><td></td><td>0</td><td>—</td><td>2</td><td>mA</td></tr><tr><td></td><td></td><td>V_{IN} < V_{SS}</td><td>I_{ICL}</td><td>0</td><td>—</td><td>−0.2</td><td>mA</td></tr><tr><td></td><td></td><td>Total MCU limit, includes sum of all stressed pins</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>V_{IN} > V_{DD}</td><td></td><td>0</td><td>—</td><td>25</td><td>mA</td></tr><tr><td></td><td></td><td>V_{IN} < V_{SS}</td><td></td><td>0</td><td>—</td><td>−5</td><td>mA</td></tr></table> <div><p>¹ Power supply must maintain regulation within operating V_{DD} range during instantaneous and operating maximum current conditions. If positive injection current (V_{IN} > V_{DD}) is greater than I_{DD}, the injection current may flow out of V_{DD} and could result in external power supply going out of regulation. Ensure external V_{DD} load will shunt current greater than maximum injection current. This will be the greatest risk when the MCU is not consuming power. Examples are: if no system clock is present, or if clock rate is very low which (would reduce overall power consumption).</p><p>² All functional non-supply pins are internally clamped to V_{SS} and V_{DD}.</p><p>³ Input must be current limited to the value specified. To determine the value of the required current-limiting resistor, calculate resistance values for positive and negative clamp voltages, then use the larger of the two values.</p><p>⁴ IRQ does not have a clamp diode to V_{DD}. Do not drive IRQ above V_{DD}.</p></div>	Num	C	Parameter	Symbol	Min	Typ	Max	Unit	20	D	DC injection current ^{1, 2, 3, 4}								Single pin limit								V _{IN} > V _{DD}		0	—	2	mA			V _{IN} < V _{SS}	I _{ICL}	0	—	−0.2	mA			Total MCU limit, includes sum of all stressed pins								V _{IN} > V _{DD}		0	—	25	mA			V _{IN} < V _{SS}		0	—	−5	mA
Num	C	Parameter	Symbol	Min	Typ	Max	Unit																																																										
20	D	DC injection current ^{1, 2, 3, 4}																																																															
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		V _{IN} > V _{DD}		0	—	25	mA																																																										
		V _{IN} < V _{SS}		0	—	−5	mA																																																										
Table A-3/Page 305	<div>Add the following thermal characterstics for the 42-pin SDIP package:</div> <table><tr><th>Rating</th><th>Symbol</th><th>Value</th><th>Unit</th></tr><tr><td>42-pin SDIP</td><td rowspan="2">Θ_{JA}</td><td>58</td><td rowspan="2">°C/W</td></tr><tr><td>1s 2s2p</td><td>47</td></tr></table>	Rating	Symbol	Value	Unit	42-pin SDIP	Θ _{JA}	58	°C/W	1s 2s2p	47																																																						
Rating	Symbol	Value	Unit																																																														
42-pin SDIP	Θ _{JA}	58	°C/W																																																														
1s 2s2p		47																																																															
Table A-6/Page 307	Move VOL (#2) specifications from Min column to Max column. Min columns should be “—”.																																																																
Figure A-12/Page 321	Change KBIP7 to KBIP6																																																																
Table B-1/Page 327	Remove “42-pin SDIP” from Available Packages in Automotive Qualification row																																																																

2 Revision History

Table 2 provides a revision history for this document.

Table 2. MC9S08AC16AD Revision History

Rev. Number	Substantive Changes	Date of Release
0	Initial release	10/2008
1	Added errata for the following sections: <ul style="list-style-type: none"> • Throughout (remove stop1 instances) • Table 4-1/Page 42 • Table 4-2/Page 44 • Section 9.2/Page 159 • Section 9.3/Page 159 • Table A-6/Page 307 • Figure A-12/Page 321 	2/2009

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