

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	<p>Add 42 SDIP device to the Consumer and Industrial "AC" Devices section with the following details:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Feature</th> <th>MC9S08AC16</th> <th>MC9S08AC8</th> </tr> </thead> <tbody> <tr> <td>Pin quantity</td> <td style="text-align: center;">42</td> <td style="text-align: center;">42</td> </tr> <tr> <td>ADC channels</td> <td style="text-align: center;">8</td> <td style="text-align: center;">8</td> </tr> <tr> <td>TPM1 channels</td> <td style="text-align: center;">4</td> <td style="text-align: center;">4</td> </tr> <tr> <td>TPM2 channels</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> <tr> <td>TPM3 channels</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> <tr> <td>KBI pins</td> <td style="text-align: center;">6</td> <td style="text-align: center;">6</td> </tr> <tr> <td>GPIO pins</td> <td style="text-align: center;">32</td> <td style="text-align: center;">32</td> </tr> </tbody> </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																							
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TPM3 channels	2	2																							
KBI pins	6	6																							
GPIO pins	32	32																							
Figure 1-1/Page 21	<p>Change legend to the following:</p> <ul style="list-style-type: none"> □ = Not available on 32-, 42-, or 44-pin packages ○ = Not available on 32- or 42-pin packages △ = Not available on 32-pin packages ◇ = Not available on MC9S08AWxxA devices 																								
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	In row 0x001E, change "KBEDG7" to "0" as KBIP7 does not exist on this device In row 0x001F, change "KBIPE7" to "0" as KBIP7 does not exist on this device																								
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	<p>Change legend to the following:</p> <ul style="list-style-type: none"> □ = Not available on 32-, 42-, or 44-pin packages ○ = Not available on 32- or 42-pin packages △ = Not available on 32-pin packages ◇ = Not available on MC9S08AWxxA devices 																								
Section 9.2/Page 159	<p>First paragraph, remove second sentence. Second paragraph, remove second sentence. Third paragraph, change KBIP7 to KBIP6.</p>																								
Section 9.3/Page 159	Change second bullet from "Four falling edge/low level or ..." to "Three falling edge/low level or.."																								
Figure 9-1/Page 160	<p>Change legend to the following:</p> <ul style="list-style-type: none"> □ = Not available on 32-, 42-, or 44-pin packages ○ = Not available on 32- or 42-pin packages △ = Not available on 32-pin packages ◇ = Not available on MC9S08AWxxA devices 																								

Table 1. MC9S08AC16 Rev 6 Errata (continued)

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

Table 1. MC9S08AC16 Rev 6 Errata (continued)

Location	Description																																																															
Page 288	<p>Add the following DC injection current specifications to the end of the DC Characteristics table.</p> <table border="1"> <thead> <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> </thead> <tbody> <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 rowspan="2"> I_{IC} </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>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> </tbody> </table> <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>	Num	C	Parameter	Symbol	Min	Typ	Max	Unit	20	D	DC injection current ^{1, 2, 3, 4}								Single pin limit								$V_{IN} > V_{DD}$	I _{IC}	0	—	2	mA			$V_{IN} < V_{SS}$	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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		$V_{IN} < V_{SS}$		0	—	-5	mA																																																									
Table A-3/Page 305	<p>Add the following thermal characteristics for the 42-pin SDIP package:</p> <table border="1"> <thead> <tr> <th>Rating</th> <th>Symbol</th> <th>Value</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>42-pin SDIP</td> <td rowspan="2">Θ_{JA}</td> <td>58</td> <td rowspan="2">°C/W</td> </tr> <tr> <td></td> <td>47</td> </tr> </tbody> </table>	Rating	Symbol	Value	Unit	42-pin SDIP	Θ_{JA}	58	°C/W		47																																																					
Rating	Symbol	Value	Unit																																																													
42-pin SDIP	Θ_{JA}	58	°C/W																																																													
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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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