
MCP23008 Rev. A Silicon Errata

The MCP23008 parts you have received conform functionally to the Device Data Sheet (DS21919C), except for the anomalies described below.

All of the issues listed here will be addressed in future revisions of the MCP23008 silicon.

1. Module: I²C™ Module

In silicon revision A1 and prior: The I²C may detect its slave address (OPCODE) at the wrong time in a data transfer and acknowledge (ACK) its perceived OPCODE.

During normal operations, the MCP23008 expects the byte immediately following a Start bit to be an OPCODE. When the device is not addressed, it should remain silent and not interfere with the bus. However, the device continues to monitor the bus and checks for an address match every 8 bits and acknowledges (ACKs) if a match is detected.

While the device checks for a match every 8 bits, every data byte transfer on the bus is 9 bits long, causing the device's matching routine to get out of phase with the bus. Therefore, the false ACK could occur in the data field as well as the ack field.

Work around

The issue was addressed and no longer appears in silicon revision A2. See Appendix B: "Silicon Revision History" to determine how to identify the silicon revisions.

As long as there are no other devices on the bus, or the data on the bus is known (and does not cause a false match), the issue will not appear.

A hardware work around may be used which disables the clock input to the MCP23008 when it is not addressed.

Date Codes that pertain to this issue:

- Date code 0542 and earlier have the issue.
- Date code 0543 and later do not have the issue.

Clarifications/Corrections to the Data Sheet:

In the MCP23008 Data Sheet (DS21919C), the following clarifications and corrections should be noted.

None.

MCP23008

APPENDIX A: REVISION HISTORY

Rev A Document (11/2005)

Initial Release of this Document.

APPENDIX B: SILICON REVISION HISTORY

The following table and package marking information indicates how to determine the revision of the MCP23008 device. The revision information can be determined by the Year and Week Code of the manufacturer printed on the device.

TABLE B-1: SILICON REVISION/DEVICE MARKING

Silicon Revision	YYWWNNN		Comments
	Start Date	End Date	
Rev A2	0543NNN	—	In Production
Rev A1	—	0543NNN	

Legend: "N" is any alphanumeric character.

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