

PCN Number: CC152204

Notification Date: June 04, 2015

Title: Revision of POR (Power On Reset) Circuit of AT25xxxB Automotive grade Serial EEPROMs									
Product Identification: All Packages of the Automotive Temperature Grade (-40C to +125°C) AT25xxxB SPI Serial EEPROMs									
Reason for Change: <table border="0"> <tr> <td>☐ Material / Composition</td> <td>☐ Manufacturing Location</td> </tr> <tr> <td>☐ Processing / Manufacturing</td> <td>☒ Quality / Reliability</td> </tr> <tr> <td>☒ Design / Firmware</td> <td>☐ Logistics</td> </tr> <tr> <td>☒ Datasheet</td> <td>☐ Other:</td> </tr> </table>		☐ Material / Composition	☐ Manufacturing Location	☐ Processing / Manufacturing	☒ Quality / Reliability	☒ Design / Firmware	☐ Logistics	☒ Datasheet	☐ Other:
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☒ Datasheet	☐ Other:								
Change Description: As part of Atmel's ongoing effort to improve product performance, Atmel has modified the POR (Power On reset) circuit on all AT25xxxB Series SPI interface Automotive Grade Serial EEPROMs. This change is implemented to support those applications which require faster reset at cold temperatures and some other applications which cannot comply with current datasheet recommendation to power down to, and remain at 0.0V for at least 500ms before beginning the next power up sequence. The new devices offer a modified reset response time as defined below: Device Reset Description and Purpose The main purpose of a POR circuit is to ensure that the device will initialize into the correct state upon power-up, as well as making sure the internal circuits are only allowed to operate at safe V_{CC} voltage supply levels. The threshold of the modified POR circuit (V_{POR}) has a specified minimum value of 1.0V and maximum value of 1.7V. <u>V_{CC} Power Up:</u> It is recommended that the V_{CC} voltage level rise monotonically from 0V V_{DC} to the full application V_{CC} level in less than 1ms. Upon power-up, the device will not respond to any commands until the V_{CC} level crosses the internal reset voltage threshold which brings the device out of reset and into standby mode. The system designer must then ensure that instructions are not sent to the device until the V_{CC} supply has reached a stable value that is greater than or equal to the V_{CC} minimum rating of the device. After this stable V_{CC} value has been reached, the system must also wait a minimum of 100µs before sending the first command to the device. <u>V_{CC} Power Down or Power Loss:</u> If an event occurs in the system where the V_{CC} level supplied to the device drops below the maximum V_{POR} level specified, it is recommended that a full power cycle sequence be performed by first driving the V_{CC} pin to GND, waiting at least a minimum of V_{POR} 30µs, and then performing a new power-up sequence in compliance with the requirements previously defined. In the event that a full power down to GND cannot be achieved, or for systems with residual voltages that take time to fully discharge, to ensure a proper device reset, the V_{CC} level must remain below the minimum V_{POR} at least 100µs before the V_{CC} supply can be raised again to the system V_{CC} level. It is to be noted that if the V_{CC} supply is interrupted and falls into the V_{POR} range while a write cycle is in progress, the byte or bytes being written to may become corrupted.									

Identification Method to Distinguish Change:

All modified devices will be offered under the same Catalogue Part Number (CPN), a new package marking will be used for easier identification of modified devices.

The top package marking format for the new modified devices versus current part numbers are shown in Appendix.

List of Affected Parts

Atmel's Current Part Number	Description	Package Type
AT25080B-SSPD-T	Serial EEPROM, 8Kbit, SPI	SOIC8
AT25080B-XPD-T	Serial EEPROM, 8Kbit, SPI	TSSOP8
AT25160B-SSPD-T	Serial EEPROM, 16Kbit, SPI	SOIC8
AT25160B-XPD-T	Serial EEPROM, 16Kbit, SPI	TSSOP8
AT25320B-SSPD-T	Serial EEPROM, 32Kbit, SPI	SOIC8
AT25320B-XPD-T	Serial EEPROM, 32Kbit, SPI	TSSOP8
AT25640B-SSPD-T	Serial EEPROM, 64Kbit, SPI	SOIC8
AT25640B-XPD-T	Serial EEPROM, 64Kbit, SPI	TSSOP8
AT25128B-SSPD-T	Serial EEPROM, 128Kbit, SPI	SOIC8
AT25128B-XPD-T	Serial EEPROM, 128Kbit, SPI	TSSOP8
AT25256B-SSPD-T	Serial EEPROM, 256Kbit, SPI	SOIC8
AT25256B-XPD-T	Serial EEPROM, 256Kbit, SPI	TSSOP8

Qualification Data:	☒ Available	☐ Will be available (mm/dd/yr):	☐ Not Applicable
Samples:	☒ Available	☐ Will be available (mm/dd/yr):	☐ Not Applicable

Quantifiable Impact on Quality & Reliability: None

Proposed First Ship Date: September 15, 2015

**The Proposed First Ship Date is the forecasted date that a customer may expect to receive changed product. This is determined by the estimated date of inventory depletion on the PCN issue date. This may be affected by fluctuations in supply and demand. Consequently, although customers should be prepared to receive changed product on this date, Atmel will continue to ship pre-changed product until a time in which inventory has been depleted. This may result in pre-changed product being shipped to customers after this forecasted date.*

Atmel Contact: Please contact your Atmel Sales Representative or Distributor for additional information (when replying via e-mail please include the PCN number in subject line).

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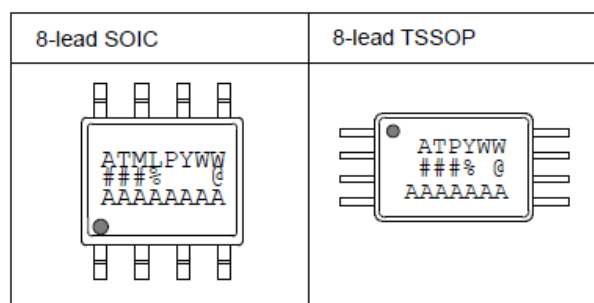
CUSTOMER ACKNOWLEDGEMENT OF RECEIPT: Atmel requests you acknowledge receipt of this PCN. Please complete and email to pcnadm@atmel.com and the Atmel Contact listed above. In your acknowledgement, you can grant approval or request additional information. **Atmel will deem this change accepted unless specific conditions of acceptance are provided in writing within 30 days from the date of this notice.**

To be completed by customer:

☐ Approved

☐ Rejected (Please state reason for rejection):

Company:
Name:
Title:
Date:
Email Address:
Location:
Comments:

Appendix – PRODUCT IDENTIFICATION**Package Marking** – Current AT25xxxB versus New Modified Devices**Current AT25xxxB Devices – Package Marking****AT25080B, AT25160B, AT25320B, AT25640B, AT25128B, and AT25256B:
Automotive Package Marking Information**

Note 1: ● designates pin 1

Note 2: Package drawings are not to scale

Catalog Number Truncation

AT25080B	Truncation Code ###: 58B
AT25160B	Truncation Code ###: 5AB
AT25320B	Truncation Code ###: 5BB
AT25640B	Truncation Code ###: 5CB
AT25128B	Truncation Code ###: 5DB
AT25256B	Truncation Code ###: 5EB

Date Codes

Y = Year	M = Month	WW = Work Week of Assembly
5: 2015	A: January	02: Week 2
6: 2016	B: February	04: Week 4
7: 2017	...	...
8: 2018	L: December	52: Week 52

% = Voltages

D: 2.5V minimum

Country of Assembly

@ = Country of Assembly

Lot Number

AAA...A = Atmel Wafer Lot Number

Grade/Lead Finish Material

P: Automotive/NiPdAu

Trace Code

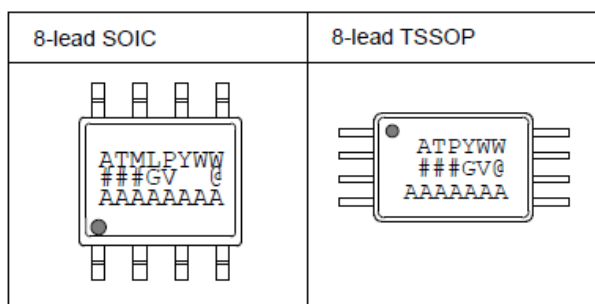
XX = Trace Code (Atmel Lot Numbers Correspond to Code)
 Example: AA, AB.... YZ, ZZ

Atmel Truncation

AT: Atmel
 ATM: Atmel
 ATML: Atmel

Package Marking – Revised POR Devices to Identify the Change

AT25080B, AT25160B, AT25320B , AT25640B, AT25128B, & AT25256B: Automotive Package Marking Information (GV Customer Assigned Number)



Note 1: ● designates pin 1

Note 2: Package drawings are not to scale

Catalog Number Truncation

AT25080B	Truncation Code ###: 58B
AT25160B	Truncation Code ###: 5AB
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AT25128B	Truncation Code ###: 5DB
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Date Codes

Y = Year	M = Month	WW = Work Week of Assembly
5: 2015	9: 2019	A: January
6: 2016	0: 2020	B: February
7: 2017	1: 2021	...
8: 2018	2: 2022	L: December
		02: Week 2
		04: Week 4
		...
		52: Week 52

Voltages

D: 2.5V minimum

Country of Assembly

@ = Country of Assembly

Lot Number

AAA...A = Atmel Wafer Lot Number

Grade/Lead Finish Material

P: Automotive/NiPdAu

Trace Code

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Atmel Truncation

AT: Atmel
ATM: Atmel
ATML: Atmel