



**AT25128A/256A
(AT3553A/B/C/D)
SPI EEPROM
Product Qualification**



The AT25128A/256A Serial Peripheral Interface EEPROMs are fabricated on the AT35000 CMOS process. With the exception of HBM ESD, all tests were performed at Atmel's Colorado Springs Facility.

This report summarizes the product level qualification data, ESD, Latchup, and Write Endurance for the AT25128/256A SPI EEPROMs. This data, in conjunction with the AT35000 Process Qualification and Reliability Report, qualifies the AT25128A/256A.

Package specific qualification data is provided separately.



AT3553A/B/C/D Product Qualification

ESD Characterization

Device: AT25128A/256A

Lot Number: Lot#3g0820

Quantity Tested: 3/ lot per Voltage

Test Temperature: 25C

ESD Stress Equipment:: ORYX Model 11000 ESD Test System; Human Body Model

Pass/Fail via Final Production Test Program: EPRO Model 142AX Tester @ -40C, 25C, 125C

Test per Mil Std 883, Method 3015: 3 Pulses Each Polarity per Specified Pin Combinations

			3 Positive & 3 Negative Pulses per The Specified Pin Combinations				Max Passing Voltage	
Pin Name	Function	Tested As	Qty/Fail 500V	Qty/Fail 1000V	Qty/Fail 2000V	Qty/Fail 4000V	Qty/Fail	Voltage
Vcc	Power	Vcc	3/0	3/0	3/0	3/2	3/0	3000
Gnd	Ground	Gnd	3/0	3/0	3/0	3/2	3/0	3000
CS	Chip Select	Input	3/0	3/0	3/0	3/2	3/0	3000
Hold	Suspend Input	Input	3/0	3/0	3/0	3/2	3/0	3000
SI	Serial Data IN	Input	3/0	3/0	3/0	3/2	3/0	3000
WP	Write Protect	Input	3/0	3/0	3/0	3/2	3/0	3000
SCK	Serial Clock	Input	3/0	3/0	3/0	3/2	3/0	3000
SO	Serial Data OUT	Output	3/0	3/0	3/0	3/2	3/0	3000
Functional Test Only Failing Pin Not Identified		See Above	3/0	3/0	3/0	3/2	3/0	3000



AT3553A/B/C/D Product Qualification

ESD Characterization

Device: AT25128A/256A

Lot Number: Lot#4g1442

Quantity Tested: 3/ lot per Voltage

Test Temperature: 25C

ESD Stress Equipment:: ORYX Model 9000 ESD Test System; Charged Device Model

Pass/Fail via Final Production Test Program: EPRO Model 142AX Tester @ 25C, 125C

Test per JEDEC Standard C101A

			3 Positive & 3 Negative Pulses per The Specified Pin Combinations					
							Max Passing Voltage	
Pin Name	Function	Tested As	Qty/Fail 250V	Qty/Fail 500V	Qty/Fail 750V	Qty/Fail 1000V	Qty/Fail	Voltage
Vcc	Power	Vcc	3/0	3/0	3/0	3/0	3/0	1000
Gnd	Ground	Gnd	3/0	3/0	3/0	3/0	3/0	1000
CS	Chip Select	Input	3/0	3/0	3/0	3/0	3/0	1000
Hold	Suspend Input	Input	3/0	3/0	3/0	3/0	3/0	1000
SI	Serial Data IN	Input	3/0	3/0	3/0	3/0	3/0	1000
WP	Write Protect	Input	3/0	3/0	3/0	3/0	3/0	1000
SCK	Serial Clock	Input	3/0	3/0	3/0	3/0	3/0	1000
SO	Serial Data OUT	Output	3/0	3/0	3/0	3/0	3/0	1000
Functional Test Only Failing Pin Not Identified		See Above		3/0	3/0	3/0	3/0	1000



AT3553A/B/C/D Product Qualification

Latch-Up Characterization

Device: AT25128A/256A

Lot Number: Lot#3g0820

Quantity Tested: 5 per lot

Test Method: JEDEC 78

Final Production Test Program: EPRO Model 142AX Tester @ -40C, 25C, 125C

Over Current Test Voltage Vcc = 5.0V

Maximum Applied Trigger Current = 200 mA

Maximum Applied Trigger Voltage = 7.0 V

Pin Name	Function	Tested As	Max Trigger Current			Max Trigger Voltage		
			Passing* -I (mA)	Passing* +I (mA)	Compliance Setting (V)	Passing* -V (V)	Passing* +V (V)	Compliance Setting (mA)
Vcc	Power	Vcc	---	---	---	---	7.0	250
Gnd	Ground	Gnd	---	---	---	---	---	---
CS	Chip Select	Input	200	200	7.0	---	---	---
Hold	Suspend Input	Input	200	200	7.0	---	---	---
SI	Serial Data IN	Input	200	200	7.0	---	---	---
WP	Write Protect	Input	200	200	7.0	---	---	---
SCK	Serial Clock	Input	200	200	7.0	---	---	---
SO	Serial Data OUT	Output	200	200	7.0	---	---	---

* 0 Fails for Latchup or Post Stress Functional Tests.

Write Endurance Characterization

Device: AT25128A/256A

Lot Number: Lot# 4e5772

Quantity Tested: 100

Test Temperature: -40C, 25C, 125C

Vcc: 5 Volts

Write Mode: Page

Highest Passing Cycles: 1,000,000

Cycles To First Failure: 1,000,000