



**AT24C16A
(AT3552U)
2-Wire Serial EEPROM
Product Qualification**



The AT24C16A 2-Wire Serial EEPROMs are fabricated on Atmel's AT35000 CMOS process. With the exception of HBM ESD, all testing is performed at the Atmel Colorado Springs Facility. Test samples are selected randomly from standard product.

This report summarizes the product level qualification data, ESD, Latchup, and Write Endurance, for the AT24C16A Serial EEPROMs. This data, in conjunction with the **AT35000 Process Qualification and Reliability Report**, qualifies the AT24C16A for Commercial, Industrial and Automotive applications.

Package specific qualification data is available separately.



AT24C16A Product Qualification

ESD Characterization

ORYX Model 11000 ESD Test System

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

Stress Test Temperature: 25C

Quantity Tested: 3/Lot/Voltage

Device: AT3552U

Human Body Model Testing – Mil Std 883, Method 3015

Lot Number: 3h0529

			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	3/3	3/3	3/0	1000
Gnd	Ground	Gnd	3/0	3/0	3/3	3/3	3/0	1000
A0	Address	Input/Output	3/0	3/0	3/3	3/3	3/0	1000
A1	Address	Input/Output	3/0	3/0	3/3	3/3	3/0	1000
A2	Address	Input/Output	3/0	3/0	3/3	3/3	3/0	1000
WP	Write Protect	Input/Output	3/0	3/0	3/3	3/3	3/0	1000
SCL	Serial Clock Input	Input/Output	3/0	3/0	3/3	3/3	3/0	1000
SDA	Serial Data	Input/Output	3/0	3/0	3/3	3/3	3/0	1000
Functional Test Only Failing Pin Not Identified		See Above	3/0	3/0	3/3	3/3	3/0	1000

Machine Model Testing – JEDEC Std 22A, Method 115A

Lot Number: 3h0529

			1 Positive & 1 Negative Pulse per The Specified Pin Combinations					
							Max Passing Voltage	
Pin Name	Function	Tested As	Qty/Fail 50V	Qty/Fail 100V	Qty/Fail 150V	Qty/Fail 200V	Qty/Fail	Voltage
Vcc	Power	Vcc	3/0	3/0	3/3	3/3	3/0	100
Gnd	Ground	Gnd	3/0	3/0	3/3	3/3	3/0	100
A0	Address	Input/Output	3/0	3/0	3/3	3/3	3/0	100
A1	Address	Input/Output	3/0	3/0	3/3	3/3	3/0	100
A2	Address	Input/Output	3/0	3/0	3/3	3/3	3/0	100
WP	Write Protect	Input/Output	3/0	3/0	3/3	3/3	3/0	100
SCL	Serial Clock Input	Input/Output	3/0	3/0	3/3	3/3	3/0	100
SDA	Serial Data	Input/Output	3/0	3/0	3/3	3/3	3/0	100
Functional Test Only Failing Pin Not Identified		See Above	3/0	3/0	3/3	3/3	3/0	100



AT24C16A Product Qualification

ESD Characterization

ORYX, Orion 9000 ESD Test System

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

Stress Test Temperature: 25C

Quantity Tested: 3/Lot/Voltage

Device: AT3552U

Charged Device Model Testing – JESD 22-C101A

Lot Number: 3h0529

			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
A0	Address	Input/Output	3/0	3/0	3/0	3/0	3/0	1000
A1	Address	Input/Output	3/0	3/0	3/0	3/0	3/0	1000
A2	Address	Input/Output	3/0	3/0	3/0	3/0	3/0	1000
WP	Write Protect	Input/Output	3/0	3/0	3/0	3/0	3/0	1000
SCL	Serial Clock Input	Input/Output	3/0	3/0	3/0	3/0	3/0	1000
SDA	Serial Data	Input/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	3/0	1000



AT24C16A Product Qualification

Latch-Up Characterization

ORYX Model 11000 ESD Test System

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

Test Method: JEDEC 78

Quantity Tested: 5/Lot

Stress Test Temperature: 125C

Over Current Test Voltage Vcc = 5.0 V

Maximum Applied Trigger Current = 200 mA

Maximum Applied Trigger Voltage = 9.0 V

Device: AT3552U

Lot Number: 3j0456

			Max Trigger Current			Max Trigger Voltage		
Pin Name	Function	Tested As	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	---	---	---	---	---	---
A0	Address	Input	200	200	7.0	---	---	---
A1	Address	Input	200	200	7.0	---	---	---
A2	Address	Input	200	200	7.0	---	---	---
WP	Write Protect	Input	200	200	7.0	---	---	---
SCL	Serial Clock Input	Input	200	200	7.0	---	---	---
SDA	Serial Data	Input	200	200	7.0	---	---	---
SDA	Serial Data	Output	200	200	7.0	---	---	---

* 0 Fails for Latchup or Post Stress Functional Tests.

Write Endurance Characterization

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

Device: AT3552U

Lot Number: 3j0456

Quantity Tested: 100

Stress Test Temperature: 25C

Vcc = 5.0 V

Write Mode: Page

Highest Passing Cycles: 1,000,000

Cycles to First Failure: NA

Quantity Failed: 0