



Qualification Report Summary

PCN #: GBNG-27ULJU095

Date
May 15, 2019

**Qualification of MMT as a new assembly site for selected Atmel
Parallel EEPROM products of the 19.1K and 19.5K wafer
technologies available in 30L (13.6x16x2.57mm) CPGA package.
The selected Atmel products available in 28L
(13.6x15.1x2.57mm) CPGA package will qualify by similarity.**

Purpose: Qualification of MMT as a new assembly site for selected Atmel Parallel EEPROM products of the 19.1K and 19.5K wafer technologies available in 30L (13.6x16x2.57mm) CPGA package. The selected Atmel products available in 28L (13.6x15.1x2.57mm) CPGA package will qualify by similarity.

I. Summary:

In keeping with guidelines established in MIL-STD-883, one lot of AT28C010-12UM-883 / AT19506- MU1KT product was subjected to qualification testing to meet the requirements for hermetic package reliability.

II. Conclusion:

Based on the results below, 30 lead CPGA packages assembled by MTHAI can be shipped to Military customers.

III. Device Description:

Device	1Meg Parallel EEPROM
Qual Report Doc Control #	ML05201900AP
Document Revision	A
CCB No.	3864

IV. Qualification Material:

	Lot 1
WAFER LOT	8B1903I
ASSEMBLY LOT	EH191AAA1.4
PACKAGE	30 Lead CPGA
QUAL TESTS	Mechanical Shock, Vibration, Constant Acceleration, Salt Fog

V. Qualification Data:

Group B1 Resistance to Solvents

Test Method	MIL-STD-883, 2015.14
Sample Size	(3)
Result/Sample (Fail)	Pass/3 (0)

Group B2 Bond Strength

Test Method	MIL-STD-883, 2011
Sample Size	(4) devices, total 22 wires
Result/Sample (Fail)	Pass/4 (0) 28 wires total.
Results/ Specification	MIN = 7.40gm

Group B2 Die Shear Strength

Test Method	MIL-STD-883, 2019
Sample Size	(3) devices
Result/Sample (Fail)	Pass/3 (0)

Group B3 Solderability

Test Method	MIL-STD-883, 2003
Sample Size Devices / Leads	(3) / 30 Leads
Result/Sample (Fail)	Pass/90 (0)

Group D1 Physical Dimensions

Test Method	MIL-STD-883, 2016
Sample Size	(15)
Result/Sample (Fail)	Pass/15 (0)

Group D2 Lead Integrity

Test Method	MIL-STD-883, 2004.7, TM2004
Sample Size	(15 leads), 3 devices
Result/Sample (Fail)	Pass/45 (0)

Group D3 Environmental Tests

Test Method	Liquid/Liquid Thermal Shocks MIL-STD-883, 1011
Test Condition	Condition B -55C to +125C, 15 Cycles
Required Sample Size	15
Result/Sample (Fail)	Pass/15 (0)
Test Method	Air/Air Temperature Cycles MIL-STD-883, 1010
Test Condition	15 Cycles
Required Sample Size	15/ 0 Fails
Result/Sample (Fail)	Pass/15 (0)
Test Method	Moisture Resistance MIL-STD-883, 1004
Test Condition	240 Hours
Required Sample Size	15/ 0 Fails
Result/Sample (Fail)	Pass/15 (0)
Test Method	External Visual Inspection MIL-STD-883, 1004/10
Visual Inspection	Pass/15 (0)
Final Test (25C) Result/Sample (Fail)	Pass/15 (0)
Final Test (125C) Result/Sample (Fail)	Pass/15 (0)
Final Test (-55C) Result/Sample (Fail)	Pass/15 (0)
Test Method	Seal Test Fine Leakage MIL-STD-883, 1014
Test Condition	Condition B
Result/Sample (Fail)	Pass/15 (0)
Test Method	Seal Test Gross Leakage MIL-STD-883, 1014
Test Condition	Condition C
Result/Sample (Fail)	Pass/15 (0)

Group D4 Mechanical Tests

Test Method	Mechanical Shock MIL-STD-883, 2002
Test Condition	Condition B
Required Sample Size	15
Test Method	Variable Vibration Mil-STD-883, 2007
Test Condition	Condition A
Required Sample Size	15
Test Method	Constant Acceleration MIL-STD_883, 2001
Test Condition	Condition A
Required Sample Size	15
Test Method	Seal Test Fine Leakage MIL-STD-883, 1014
Test Condition	Condition B
Result/Sample (Fail)	Pass/15(0)
Test Method	Seal Test Gross Leakage MIL-STD-883, 1014
Test Condition	Condition C
Result/Sample (Fail)	Pass/15(0)
Test Method	External Visual Inspection MIL-STD-883, 1010
Result/Sample / (Fail)	Pass/15(0)
Final Test (25C) Result/Sample (Fail)	Pass/15(0)
Final Test (125C) Result/Sample (Fail)	Pass/15(0)
Final Test (-55C) Result/Sample (Fail)	Pass/15(0)

Group D5 Salt Atmosphere

Test Method	Salt Atmosphere MIL-STD-883, 1009
Test Condition	Condition A
Required Sample Size	15
Test Method	Seal Test Fine Leakage MIL-STD-883, 1014
Test Condition	Condition B
Result/Sample (Fail)	Pass/15 (0)
Test Method	Seal Test Gross Leakage MIL-STD-883, 1014
Test Condition	Condition C1
Result/Sample (Fail)	Pass/15 (0)
Test Method	External Visual Inspection MIL-STD-883, 1009
Result/Sample (Fail)	Pass/15 (0)

Group D6 Internal Water Vapor

Test Method	MIL-STD-883, 1018
Test Condition	5000 PPM Water Content at 100C
Sample Size	(3)
Result/Sample (Fail)	Pass/3 (0) 1780PPM Maximum Recorded

Group D9 Resistance to Solder Heat

Test Method	Soldering Heat MIL-STD-883 2036
Test Condition	260 Max Temperature
Required Sample Size	3
Final Test (25C) Result/Sample (Fail)	Pass/3 (0)
Final Test (125C) Result/Sample (Fail)	Pass/3 (0)
Final Test (-55C) Result/Sample (Fail)	Pass/3 (0)
Test Method	Seal Test Fine Leakage MIL-STD-883, 1014
Test Condition	Condition B
Result/Sample (Fail)	Pass/3 (0)
Test Method	Seal Test Gross Leakage MIL-STD-883, 1014
Test Condition	Condition C
Result/Sample (Fail)	Pass/3 (0)
Result/Sample (Fail)	Pass/3 (0)
Test Method	External Visual Inspection MIL-STD-883, 1009
Result/Sample (Fail)	Pass/3 (0)