
Features

- High Performance CMOS Technology
- Low Power Dissipation – Active and Standby
- Hardware and Software Data Protection Features
- $\overline{\text{DATA}}$ Polling for End of Write Detection
- High Reliability
 - Endurance:
 - 10^4 Cycles
 - Extended Endurance:
 - 10^5 Cycles (Option)
 - Data Retention:
 - 10 years
- Single 5V \pm 10% Supply
- Single 3V \pm 10% Supply
- CMOS Compatible Inputs and Outputs
- -40°C to +85°C Operating Range
- Typical Die Thickness of 22 Mils
- Military Product Performance (-55°C to +125°C) Available
- Element Evaluation Program Available

1. Description

Atmel Parallel EEPROMs are available in die form. All die products are 100% electrically tested in wafer form and visually inspected after saw and clean. Atmel's EEPROM die products are processed with an advanced CMOS floating gate technology. As with all Atmel products, they are designed and tested to ensure high quality and manufacturability. The devices include such features as internal error correction for extended endurance and improved data retention characteristics.

Atmel offers a full line of 5V and 3V die products (see ordering information table). An optional Element Evaluation test flow which entails sample packaging and electrical screening in accordance with MIL-STD 883 M5008 is available for military and automotive grade applications. Standard shipping methods for Atmel die products include protective wafer and wafer carriers. Optional packaging methods are available, including wafer ring mounting and wafer orientation to accommodate the customer's manufacturing equipment.

2. Testing

Reference Parallel EEPROM Die Product Test Flow. Die product Sort Test includes checks for DC parameters such as ICC and input leakage as well as for AC switching parameters. Data pattern testing, several oxide stress tests, and data retention high temperature bake tests are performed on a 100% basis to guard against pattern sensitivity and infant mortality, and ensure integrity of the core cell oxides. Contact Atmel for a detailed Die Product Test Flow Diagram, including all test conditions.

Atmel also supplies die product processed to the Element Evaluation Test Flow which includes wafer lot assembly and test in accordance with MIL-STD 883 M5004 (reference Atmel Military MIL-STD 883 Test Flow, Section 7).

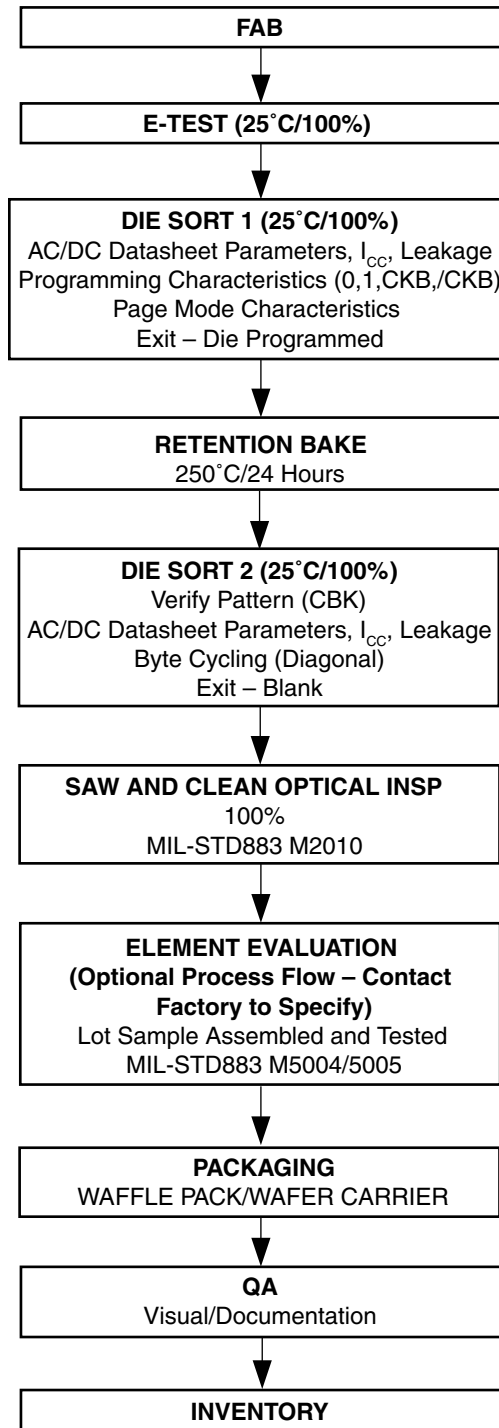


Parallel EEPROM Die Products

Die Products Overview



3. Standard Parallel EEPROM Die Product Test Flow (Commercial Grade)



4. Die Product Offering – Battery Volt & 5-Volt

Ordering Code	V _{CC}	Device T _{AA}	Package Configuration
AT28BV64B-DWF ⁽¹⁾	2.7V - 3.6V	250 ns	die
AT28BV256-DWF	2.7V - 3.6V	250 ns	die
AT28C16-DWF	4.5V - 5.5V	200 ns	die
AT28C64B-DWF	4.5V - 5.5V	200 ns	die
AT28HC64B-DWF	4.5V - 5.5V	120 ns	die
AT28C256-DWF19802	4.5V - 5.5V	120 ns	die
AT28HC256-DWF19802	4.5V - 5.5V	120 ns	die
AT28C256-DWFM19104 ⁽²⁾	4.5V - 5.5V	200 ns	die
AT28HC256-DWFM19104 ⁽²⁾	4.5V - 5.5V	120 ns	die
AT28C010-DWFM	4.5V - 5.5V	150 ns	die

Notes: 1. DWF = Commercial grade, die wafer form (-40°C to 85°C)
2. DWFM = Military grade, die wafer form (-55°C to 125°C)

5. Die Information

- Handling: Instructions for Parallel EEPROM Die Product are available from Atmel.
- Backside Condition: Silicon (grind)
- Connection: Connect substrate to ground
- Contact Atmel for die maps and coordinates



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www.atmel.com/literature

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