Parallel EEPROM

Die Products

OVERVIEW

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 ± 10% Supply
- Single 3V ± 10% Supply
- CMOS Compatible Inputs and Outputs
- -40°C to +85°C Operating Range
- Typical Die Thickness of 22mil
- Military Product Performance (-55°C to +125°C) Available
- Element Evaluation Program Available

Description

The 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. The Atmel 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.

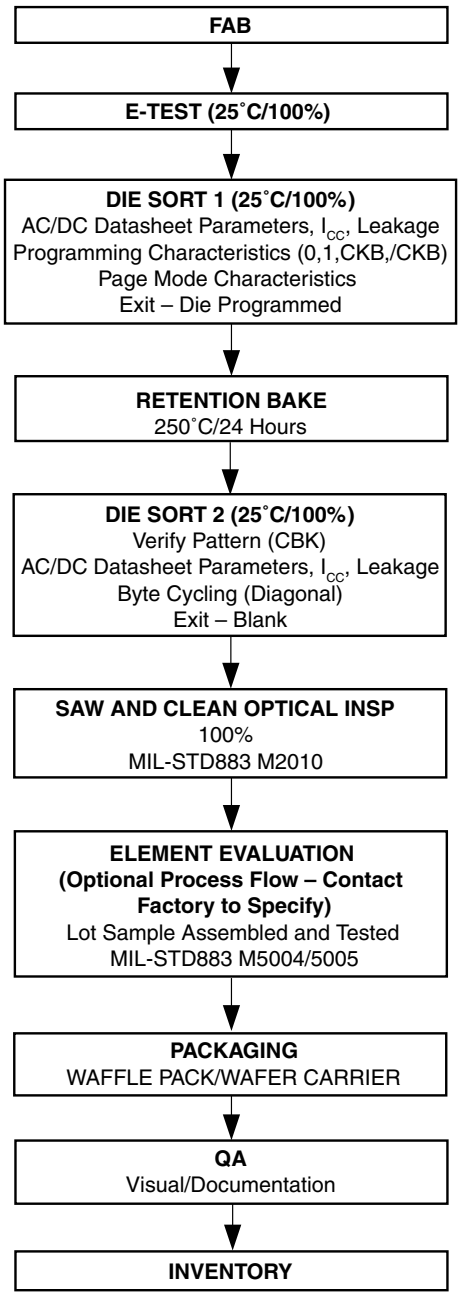
Atmel offers a full line of 5.5V die products (see Section 2., “Die Product Offering”). An optional Element Evaluation test flow, which entails sample packaging and electrical screening in accordance with MIL-STD 883 M5008, is available for military grade applications. Standard shipping methods for Atmel die products include protective waffle and wafer carriers. Optional packaging methods are available, including wafer ring mounting and wafer orientation to accommodate the customer’s manufacturing equipment.

1. 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, infant mortality, and ensure integrity of the core cell oxides. Contact Atmel sales 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).

Figure 1-1. Standard Parallel EEPROM Die Product Test Flow



2. Die Product Offering

Table 2-1. Die Product Offering — Battery Volt and 5V

Atmel Ordering Code	Device T_{AA}	Operation Range	Package	Voltage
AT28C64B-DWF	200ns	Industrial Temperature (-40°C to +85°C)	Die	4.5V to 5.5V
AT28C010-DWFM	150ns	Military Temperature (-55°C to 125°C)		
AT28C256-DWF	120ns	Industrial Temperature (-40°C to +85°C)		
AT28C256-DWFM	200ns	Military Temperature (-55°C to 125°C)		
AT28HC64BF-DWF	120ns	Industrial Temperature (-40°C to +85°C)		
AT28HC256-DWF	120ns	Industrial Temperature (-40°C to +85°C)		
AT28HC256-DWFM	120ns	Military Temperature (-55°C to 125°C)		

3. Die Information

Table 3-1. Die Information[1]

Description	
Handling	Instructions for Parallel EEPROM die products are available from Atmel.
Backside Condition	Silicon (Grind)
Connection	Connect substrate to ground.

Note: 1. Please contact Atmel sales for die maps and coordinates.

4. Revision History

Doc. Rev.	Date	Comments
0554G	07/2014	Remove AT28BV64B and AT28C16 die codes which are no longer available. Update template, Atmel logos, disclaimer page, and implemented revision history.
0554F	10/2005	

Atmel | Enabling Unlimited Possibilities®

Atmel Corporation 1600 Technology Drive, San Jose, CA 95110 USA **T:** (+1)(408) 441.0311 **F:** (+1)(408) 436.4200 | **www.atmel.com**