

Automotive-Grade MTP Memory IP

“TwinBit™ 180tc” series for TSMC0.18um BCD and MS_5V-IO Processes

Overview

NSCore's **TwinBit™ 180tc** is an embedded, true logic-based non-volatile memory solution with a high endurance up to 25K cycles and an over 10 years retention at 150°C. TwinBit™ can be implemented in TSMC 0.18um BCD Gen-II process as well as TSMC 0.18um genic mixed-signal 5V-IO process without additional masks or process steps. The TwinBit™ 180tc series covers a memory size range up to 64K Bytes (16K x 39b), making it suitable for program code storage, security key storage and system switch of ASIC/ASSP.

Applications

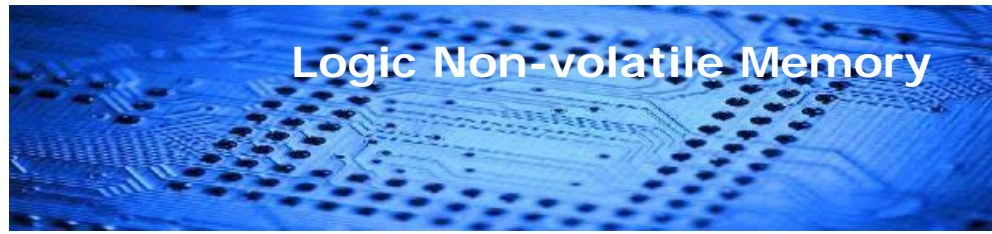
- ✓ Program Code Storage
- ✓ Security Key Storage
- ✓ System Switch
- ✓ Analog Trimming
- ✓ ID numbering

Benefits

- ✓ High density and Small area.
- ✓ No additional mask required.
- ✓ Automotive grade under AEC-Q100.
- ✓ Low-voltage and low-power operations.
- ✓ Built-in test circuit supports stress-free test environments.

Technology Comparison

	TwinBit	eFLASH	1-poly EEPROM
Mechanism	Charge-Trap	Floating Gate	Floating Gate
Bit Area (a.u.)	1	1	40
Extra mask	0	~10 masks	0
Program Unit	Byte/Page	Byte	Byte
Erase Unit	Sector	Sector	Byte



Design Support

TwinBit's design kit includes the following logical and physical information, allowing for easy and mistake-free integration into the user's design:

- Behavioral Models and Testbenches
- Timing Models
- Structural Netlists
- Floorplanning and Place & Route Models (Physical LEF)
- Datasheets (including power, timing, and area specifications)
- Layout Guidelines
- Tape-Out Guidelines
- Testing Guidelines

About NSCore

Founded in 2004, NSCore is an IP provider specializing in the field of non-volatile memory technology. NSCore has developed a non-volatile memory core which can be implemented in standard CMOS platforms with excellent process portability, high yield and high reliability. NSCore provides a complete matrix of macros (bit counts), specific design parameters for each, foundry proven yield and reliability data, and finally multiple licensing options to fit the customer's needs. Visit www.nscore.com for more information.