

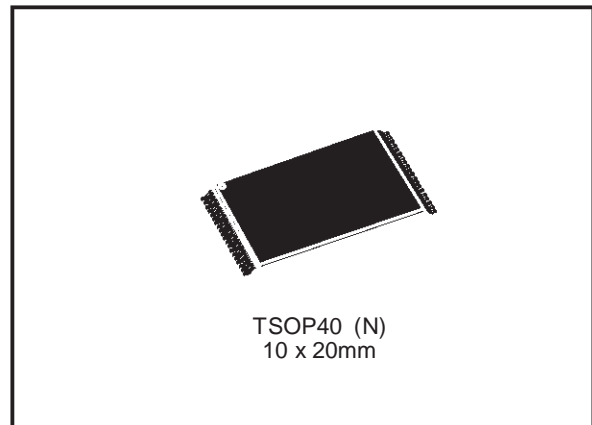


M28F411

4 Mbit (512Kb x8, Boot Block) Flash memory

DATA BRIEFING

- 5V ± 10% SUPPLY VOLTAGE
- 12V ± 5% or ± 10% PROGRAMMING VOLTAGE
- FAST ACCESS TIME: 60ns
- PROGRAM/ERASE CONTROLLER (P/E.C.)
- AUTOMATIC STATIC MODE
- MEMORY ERASE in BLOCKS
 - Boot Block (Top location) with hardware write and erase protection
 - Parameter and Main Blocks
- 100,000 PROGRAM/ERASE CYCLES
- LOW POWER CONSUMPTION
- 20 YEARS DATA RETENTION
 - Defectivity below 1ppm/year
- ELECTRONIC SIGNATURE
 - Manufacturer Code: 20h
 - Device Code: F6h



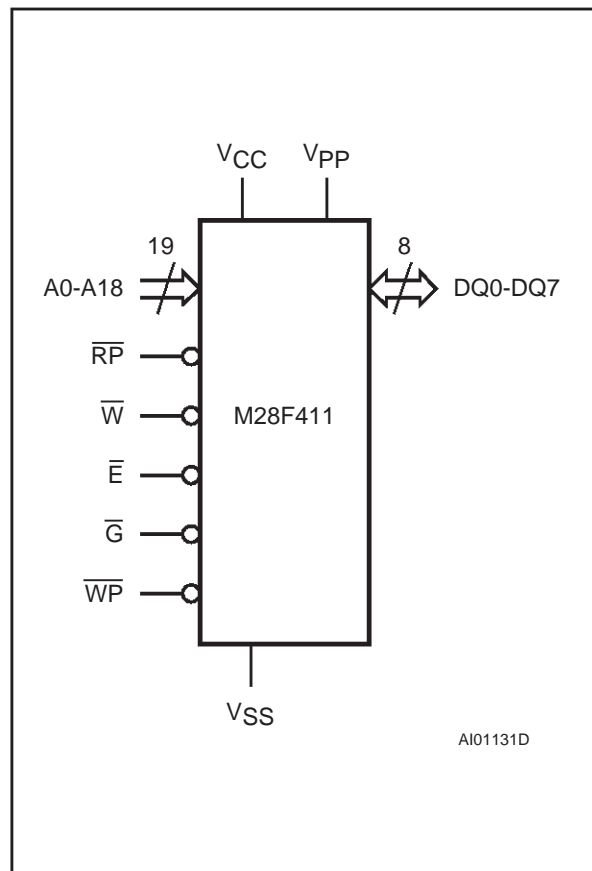
DESCRIPTION

The M28F411 Flash memory is a non-volatile memory that may be erased electrically at the block level and programmed by byte. The interface is directly compatible with most microprocessors. TSOP40 (10 x 20mm) package is used.

Signal Names

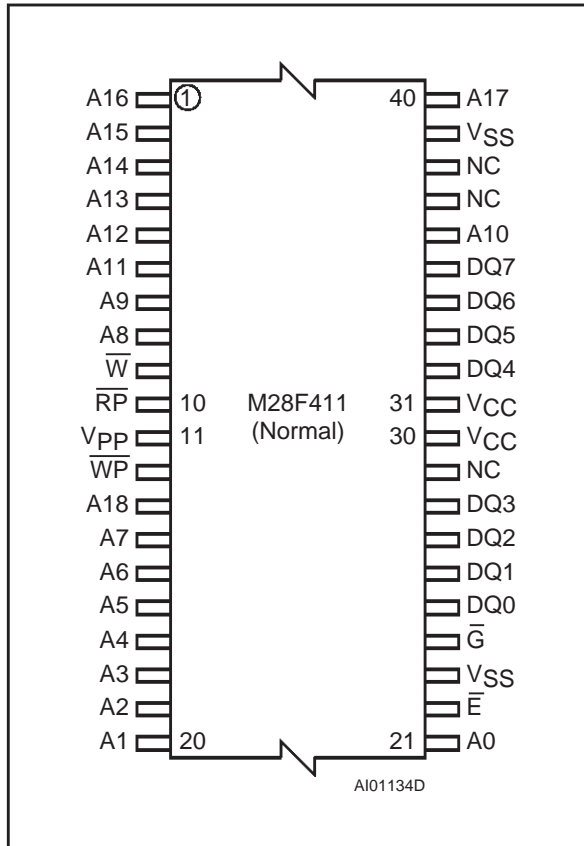
| | |
|-----------------|------------------------------------|
| A0-A18 | Address Inputs |
| DQ0-DQ7 | Data Input / Outputs |
| \bar{E} | Chip Enable |
| \bar{G} | Output Enable |
| \bar{W} | Write Enable |
| \bar{WP} | Write Protect |
| \bar{RP} | Reset/Power Down/Boot Block Unlock |
| V _{PP} | Program & Erase Supply Voltage |
| V _{CC} | Supply Voltage |
| V _{SS} | Ground |

Logic Diagram



M28F411

TSOP Pin Connections



Warning: NC = Not Connected.

Ordering Information Scheme

For a list of available options or for further information on any aspect of this device, please contact the STMicroelectronics Sales Office nearest to you.

Example: M28F411 -70 X N 1 TR

Operating Voltage

F 5V

Speed

-70 60ns
 -80 70ns
 -90 90ns
 -100 100ns
 -120 120ns

Power Supplies

blank $V_{CC} \pm 10\%$
 $V_{PP} \pm 5\%$
 X $V_{CC} \pm 5\%$
 $V_{PP} \pm 5\%$
 Y $V_{CC} \pm 10\%$
 $V_{PP} \pm 10\%$

Package

N TSOP40
 10 x 20mm

Temp. Range

1 0 to 70°C
 5 -20 to 85°C
 6 -40 to 85°C
 3 -40 to 125°C

Option

TR Tape & Reel
 Packing

Note: Devices are shipped from the factory with the memory content erased (to FFh).