

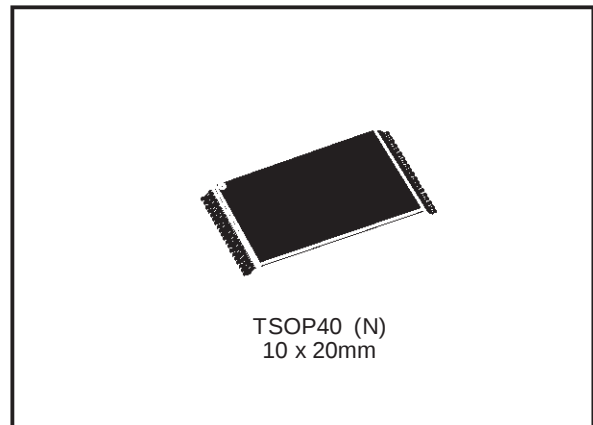


M28F411

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

DATA BRIEFING

- 5V $\pm$ 10% SUPPLY VOLTAGE
- 12V $\pm$ 5% or $\pm$ 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



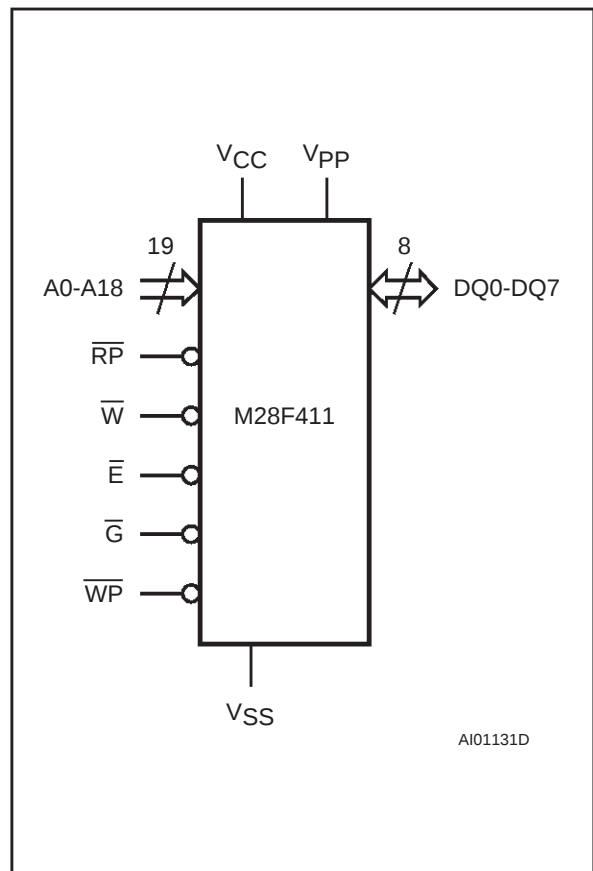
DESCRIPTION

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.

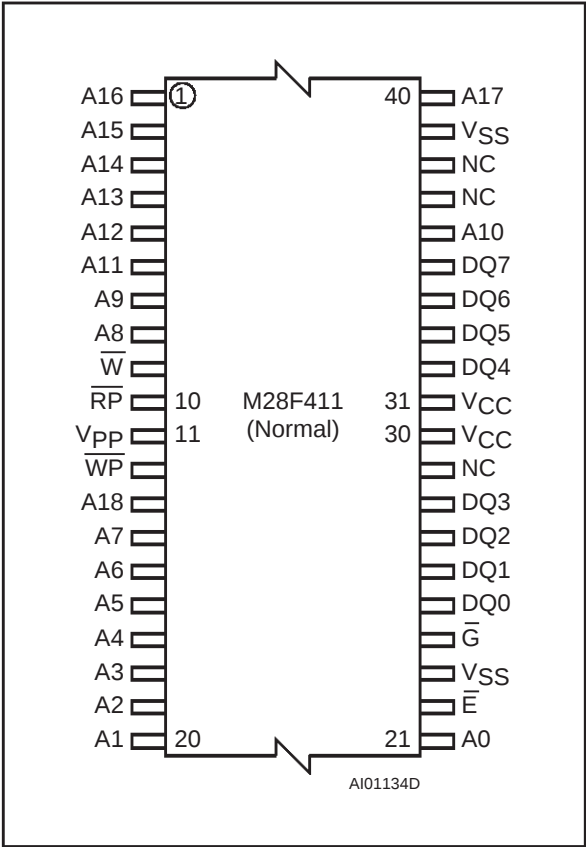
Signal Names

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

Logic Diagram



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} ± 10% V _{PP} ± 5%
X	V _{CC} ± 5% V _{PP} ± 5%
Y	V _{CC} ± 10% V _{PP} ± 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).