

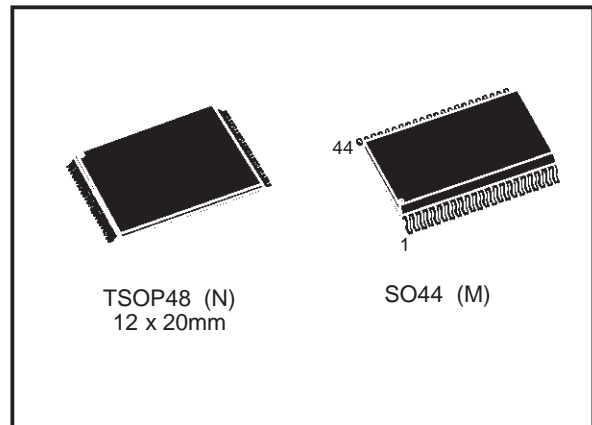


M28F220

2 Mbit (256Kb x8 or 128Kb x16, 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 (Bottom 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: 0020h
 - Device Code: 00E6h



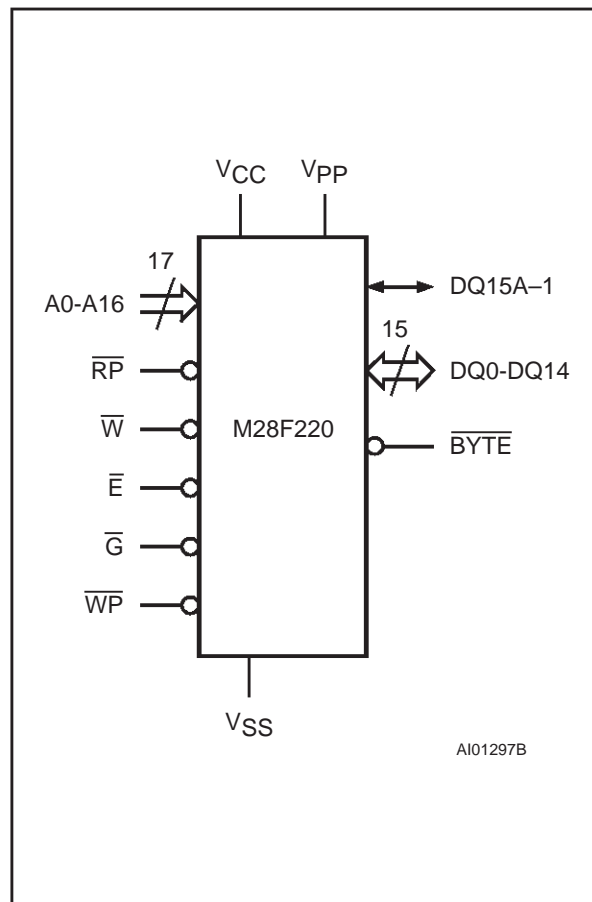
DESCRIPTION

The M28F220 Flash memory is a non-volatile memory that may be erased electrically at the block level and programmed by byte or by word.

Signal Names

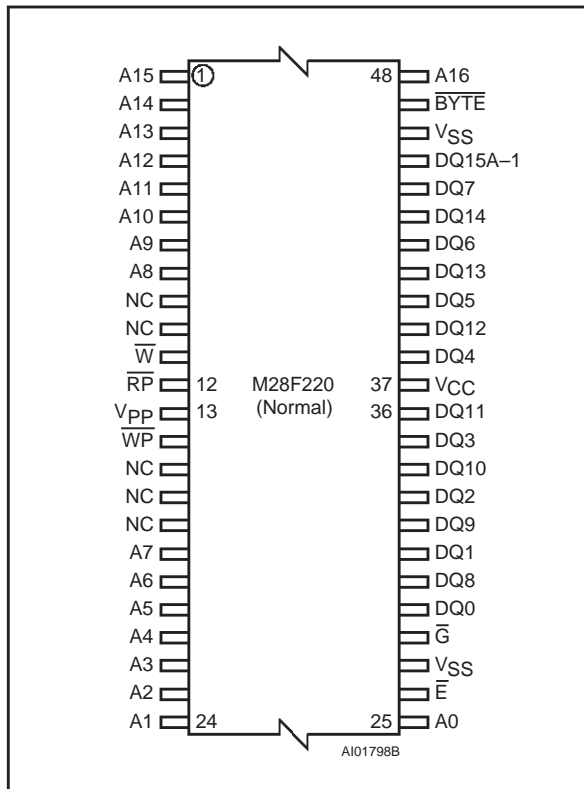
A0-A16	Address Inputs
DQ0-DQ7	Data Input / Outputs
DQ8-DQ14	Data Input / Outputs
DQ15A-1	Data Input/Output or Address Input
\bar{E}	Chip Enable
\bar{G}	Output Enable
\bar{W}	Write Enable
$\overline{\text{BYTE}}$	Byte/Word Organization
$\overline{\text{WP}}$	Write Protect
$\overline{\text{RP}}$	Reset/Power Down/Boot Block Unlock
V _{PP}	Program & Erase Supply Voltage
V _{CC}	Supply Voltage
V _{SS}	Ground

Logic Diagram



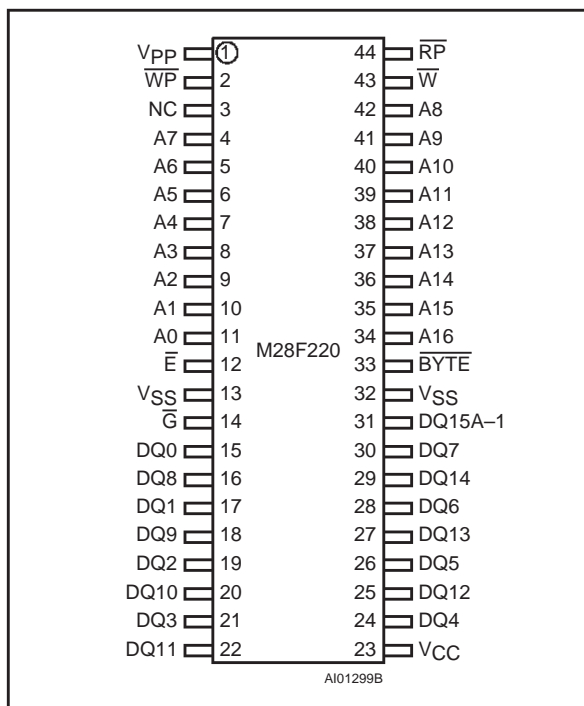
M28F220

TSOP Pin Connections



Warning: NC = Not Connected.

SO 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: M28F220 -80 X N 1 TR

Operating Voltage

F 5V

Array Matrix

2 Bottom Boot

Speed

- 60 60ns
- 70 70ns
- 80 80ns
- 90 90ns
- 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

- M SO44
- N TSOP48
12 x 20mm

Temp. Range

- 1 0 to 70 °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).