



## 4 Mbit (512Kb x8 or 256Kb x16, Boot Block) Flash Memory

- 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: 00FAh

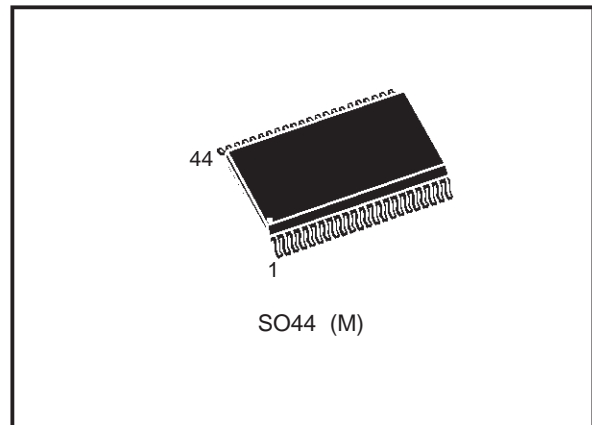
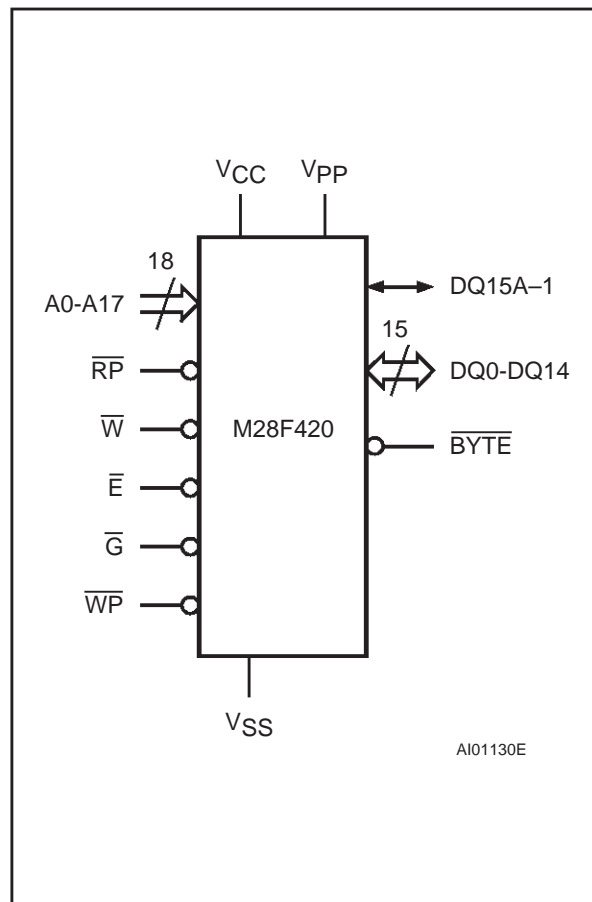


Figure 1. Logic Diagram



### DESCRIPTION

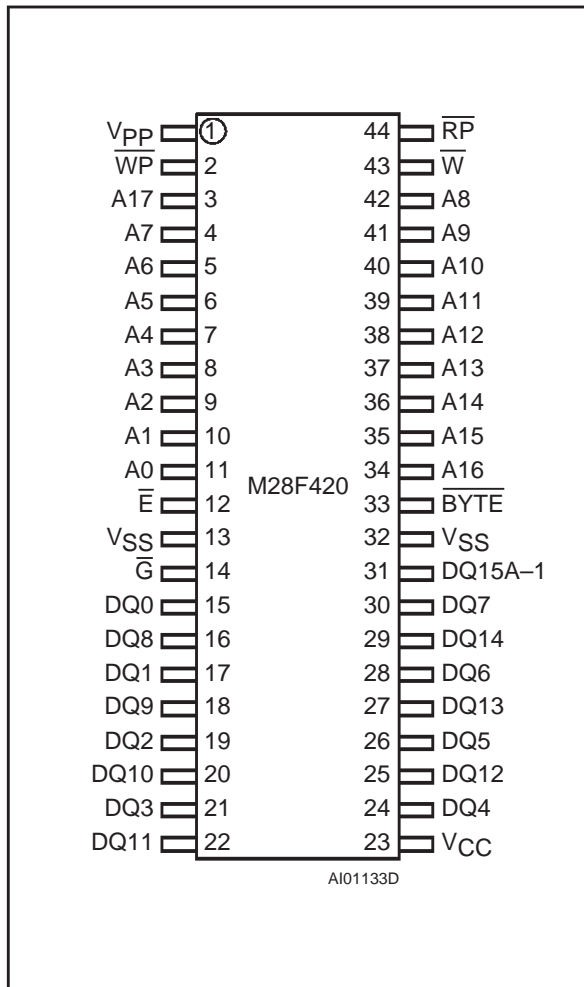
The M28F420 Flash memory is a non-volatile memory that may be erased electrically at the block level and programmed by byte or by word.

### Signal Names

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

# M28F420

## SO Pin Connections



## 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: M28F420 -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

### 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).