REVISION HISTORY - cont'd

Date	Description
November '97	Stand-by Current from 10uA typ. to 5uA typ.
	AC Test Circuit and Waveforms - modified
	PLCC mechanical data and diagram - modified
	TSOP mechanical data - modified
August '98	New ST Logo and Disclaimer - added
	Globally Revised

M28F201

2 Mbit (256Kb x8, Bulk) Flash Memory

DATA BRIEFING

- 5V ± 10% SUPPLY VOLTAGE
- 12V PROGRAMMING VOLTAGE
- FAST ACCESS TIME: 70ns
- BYTE PROGRAMMING TIME: 10µs typical
- ELECTRICAL CHIP ERASE in 1s RANGE
- LOW POWER CONSUMPTION
  - Active Current: 15mA typical
  - Stand-by Current: 5µA typical
- 10,000 PROGRAM/ERASE CYCLES
- INTEGRATED ERASE/PROGRAM-STOP TIMER
- OTP COMPATIBLE PACKAGES and PINOUTS
- 20 YEARS DATA RETENTION
  - Defectivity below 1ppm/year
- ELECTRONIC SIGNATURE
  - Manufacturer Code: 20h
  - Device Code: F4h

PLCC32 (K)

TSOP32 (N)
8 x 20 mm

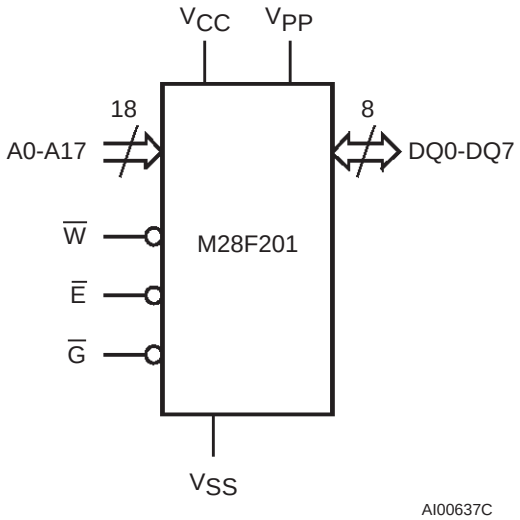
DESCRIPTION

The M28F201 Flash memory is a non-volatile memory that may be erased electrically at the chip level and programmed by byte. It is organised as 256K bytes by 8 bits. It uses a command register architecture to select the operating modes and thus provide a simple microprocessor interface. The device is offered in PLCC32 and TSOP32 (8 x 20mm) packages. Both normal and reverse pinouts are available for the TSOP32 package.

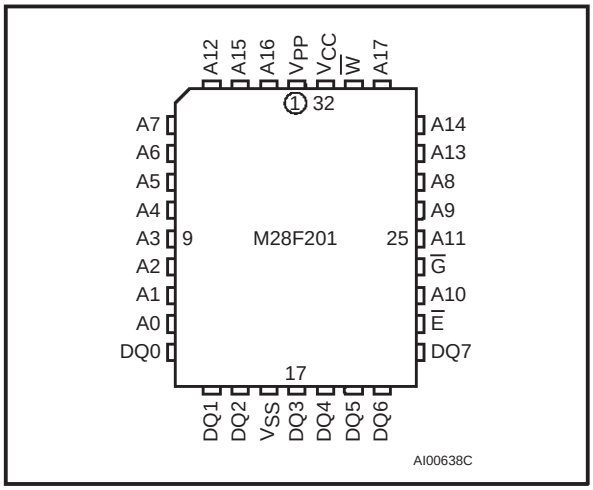
Signal Names

A0-A17	Address Inputs
DQ0-DQ7	Data Inputs / Outputs
$\overline{E}$	Chip Enable
$\overline{G}$	Output Enable
$\overline{W}$	Write Enable
V_{PP}	Program Supply
V_{CC}	Supply Voltage
V_{SS}	Ground

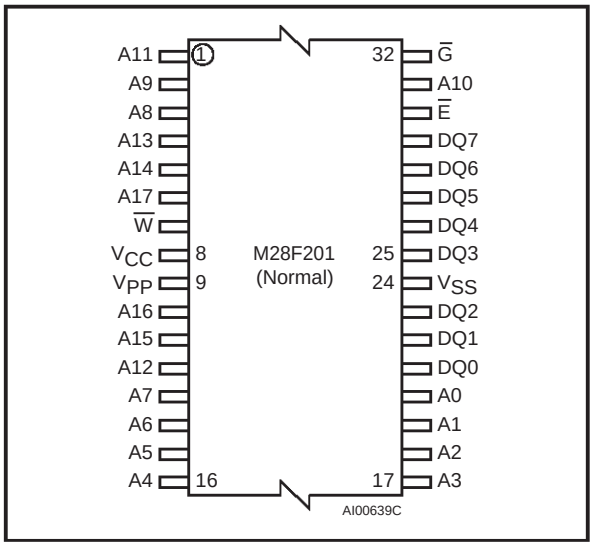
Logic Diagram



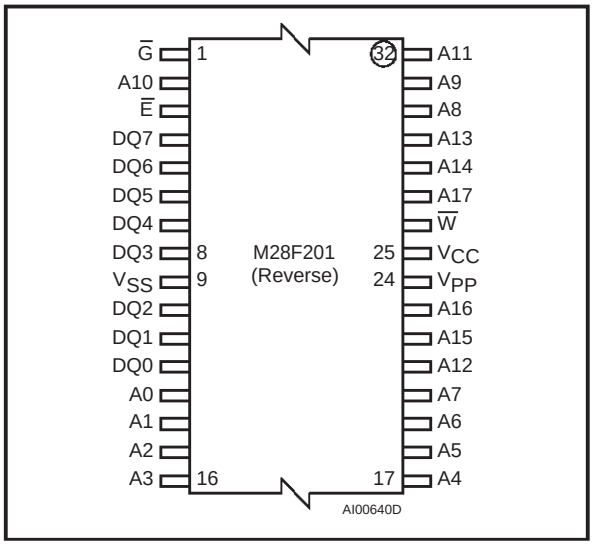
LCC Pin Connections



TSOP Pin Connections



TSOP Reverse 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: M28F201 -12 X B 1 TR

Operating Voltage

F 5V

Speed

-70 70ns

-90 90ns

-120 120ns

-150 150ns

Power Supplies

blank $V_{CC} \pm 10\%$

X $V_{CC} \pm 5\%$

Package

K PLCC32

N TSOP32
8 x 20mm

Temp. Range

1 0 to 70 °C

6 –40 to 85 °C

3 –40 to 125 °C

Option

R Reverse
Pinout

TR Tape & Reel
Packing

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