INTEGRATED CIRCUIT

TOSHIBA

TECHNICAL DATA

TOSHIBA MOS DIGITAL INTEGRATED CIRCUIT

TC5832 FT

SILICON GATE CMOS

32 MBIT (4 M × 8 BITS) CMOS NAND E^2PROM

TENTATIVE DATA

DESCRIPTION

The TC5832FT device is a single 5.0-volt 33 M (34,603,008) bit NAND Electrically Erasable and Programmable Read Only Memory (NAND EEPROM) organized as 528 byte × 16 pages × 512 blocks. The device has a 528-byte, static register which allows the program and read data to be transferred between the register and the memory cell array in 528-byte increments. The Erase operation is implemented in a single block unit (8 kbytes + 256 bytes: 528 bytes × 16 pages).

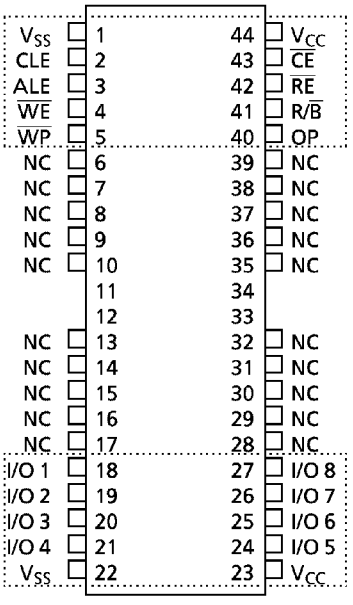
The TC5832FT is a serial type of memory device which utilizes the I/O pins for both address and data input/output as well as command inputs. The Erase and Program operations are automatically executed, making the device most suitable for applications such as solid state file storage, voice recording, image file memory for still cameras and other systems which require high-density, and non-volatile memory data storage.

FEATURES

- Organization: Memory cell array: 528 × 8 k × 8
  Register : 528 × 8
  Page size : 528 byte
  Block size : (8 k + 256) byte
- Mode : Read, Reset, Auto Page Program
  Auto Block Erase, Suspend/Resume
  Status Read
- Mode control: Serial input/output
  Command control
- Package : 400 mil TSOP Type II
  TC5832FT: TSOP44-P-400B (Weight: 0.48 g typ)
- Power supply : V_{CC} = 5.0 V ± 0.5 V
- Access time
  Cell array-Register: 10 μs max
  Serial Read Cycle : 50 ns min
- Operating current
  Read (50 ns cycle) : 15 mA typ
  Program (ave.) : 40 mA typ
  Erase (ave.) : 20 mA typ
  Standby : 100 μA

PIN ASSIGNMENT (TOP VIEW)

TC5832FT

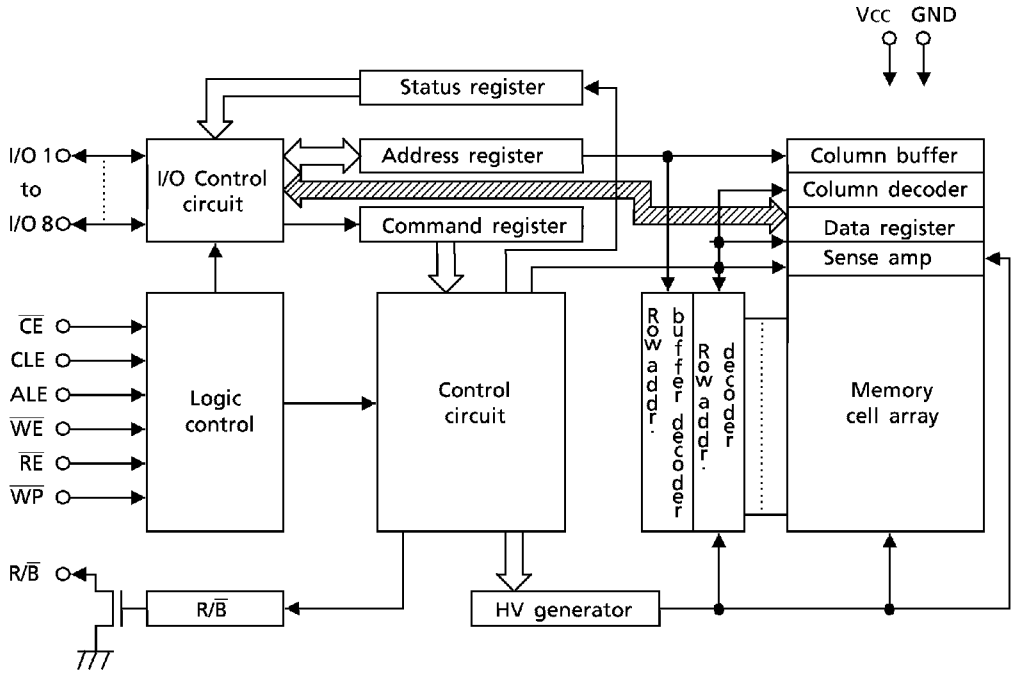


PIN NAMES

$I/O_{1\ to\ 8}$	I/O Port
$\overline{CE}$	Chip Enable
$\overline{WE}$	Write Enable
$\overline{RE}$	Read Enable
CLE	Command Latch Enable
ALE	Address Latch Enable
$\overline{WP}$	Write Protect
$R/\overline{B}$	Ready/Busy
OP	Option Pin
V_{CC}	Power Supply
V_{SS}	Ground

OP: GND Input: 528 Byte/Page Operation
V_{CC} Input : 512 Byte/Page Operation

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

SYMBOL	RATING	VALUE	UNIT
V_{CC}	Power Supply	− 0.6 to 7.0	V
V_{IN}	Input Voltage	− 0.6 to 7.0	V
$V_{I/O}$	Input/Output Voltage	− 0.6 V to Vcc + 0.5 V (≦ 7.0 V)	V
P_D	Power Dissipation	0.5	W
T_{SOLDER}	Soldering Temperature (10 s)	260	°C
T_{STG}	Storage Temperature	− 55 to 150	°C
T_{OPR}	Operating Temperature	0 to 70	°C

CAPACITANCE *(Ta = 25°C, f = 1 MHz)

SYMBOL	PARAMETER	CONDITION	MIN	TYP	MAX	UNIT
C_{IN}	Input	V_{IN} = 0 V	−	5	10	pF
C_{OUT}	Output	V_{OUT} = 0 V	−	5	10	pF

* This parameter is periodically sampled and is not tested for every component.