Integrated Device Technology, Inc.

256K (16K x 16-BIT) & 128K (8K x 16-BIT) CMOS STATIC RAM MODULE

IDT8M656S
IDT8M628S

4

FEATURES:

- High-density 256K/128K-bit CMOS static RAM modules
- 16K x 16 organization (IDT8M656) with 8K x 16 option (IDT8M628)
- Upper byte (I/O_{9-16}) and lower byte (I/O_{1-8}) separated control
  - Flexibility in application
- Equivalent to JEDEC standard for future monolithic 16K x 16/8K x 16 static RAMs
- High-speed
  - Military: 50ns (max.)
  - Commercial: 40ns (max.)
- Low power consumption: typically less than 825mW operating (IDT8M656), less than 40mW in standby
- Utilizes IDT7164s—high-performance 64K static RAMs produced with advanced CEMOS™ technology
- CEMOS process virtually eliminates alpha particle soft error rates (with no organic die coating)
- Assembled with IDT's high-reliability vapor phase solder reflow process
- Offered in the JEDEC standard 40-pin, 600 mil wide ceramic sidebraze DIP
- Single 5V (±10%) power supply
- Inputs and outputs directly TTL-compatible
- Modules available with semiconductor components compliant to MIL-STD-883, Class B
- Finished modules tested at Room, Hot and Cold temperatures for all AC and DC parameters

DESCRIPTION:

The IDT8M656S/IDT8M628S are 256K/128K-bit high-speed CMOS static RAMs constructed on a multi-layered ceramic substrate using four IDT7164 8K x 8 static RAMs (IDT8M656S) or two IDT7164 static RAMs (IDT8M628S) in leadless chip carriers.

Functional equivalence to proposed monolithic static RAMs is achieved by utilization of an on-board decoder that interprets the higher order address A_{13} to select one of the two 8K x 16 RAMs as the by-16 output and using $\overline{LB}$ and $\overline{UB}$ as two extra chip select functions for lower byte (I/O_{1-8}) and upper byte (I/O_{9-16}) control, respectively. (On the IDT8M628S 8K x 16 option, A_{13} needs to be externally grounded for proper operation.) Extremely high speeds are achievable by the use of IDT7164s fabricated in IDT's high-performance, high-reliability CEMOS technology. This state-of-the-art technology, combined with innovative circuit design techniques, provides the fastest 256K/128K static RAMs available.

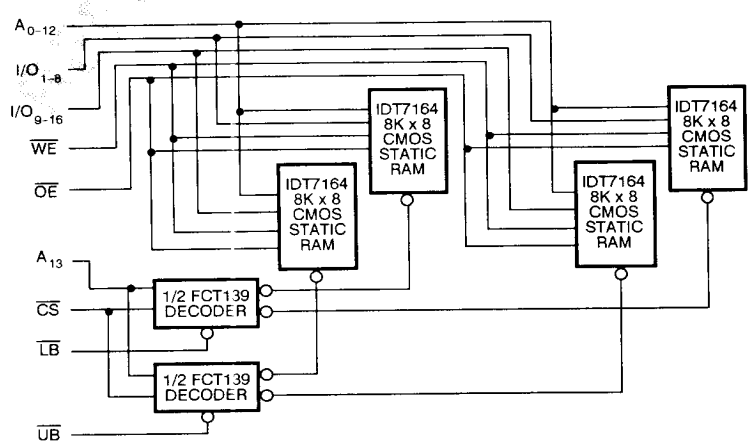
The IDT8M656S/IDT8M628S are available with access times as fast as 40ns over the commercial temperature range, with maximum operating power consumption of only 1.98W (IDT8M656S 16K x 16 option). The module also offers a full standby mode of 440mW (max.).

The IDT8M656S/IDT8M628S are offered in a high-density 40-pin, 600 mil center sidebraze DIP to take full advantage of the compact IDT7164s in leadless chip carriers.

All inputs and outputs of the IDT8M656S/IDT8M628S are TTL-compatible and operate from a single 5V supply. (NOTE: Both V_{CC} pins need to be connected to the 5V supply and both GND pins need to be grounded for proper operation.) Fully asynchronous circuitry is used, requiring no clocks or refreshing for operation, and providing equal access and cycle times for ease of use.

All IDT military module semiconductor components are manufactured in compliance with the latest revision of MIL-STD-883, Class B, making them ideally suited to applications demanding the highest level of performance and reliability.

FUNCTIONAL BLOCK DIAGRAM



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