CMOS STATIC RAM PLASTIC MODULE 1 MEGABIT (64K x 16-BIT) AND 512K (32K x 16-BIT)

Integrated Device Technology, Inc.

FEATURES:

- High-density 1024K/512K-bit CMOS static RAM module
- 64K x 16 organization (IDT8MP624) with 32K x 16 option (IDT8MP612)
- Upper byte (I/O_{9-16}) and lower byte (I/O_{1-8}) separated control
  —Allows flexibility in application
- Equivalent to JEDEC standard for future monolithic 64K x 8/32K x 16 static RAMs
- Fast access times
  —60ns (max.) over commercial temperature range
- Low-power consumption
- CEMOS™ process virtually eliminates alpha particle soft error rates (with no organic die coating)
- Offered in both DIP and SIP (single in-line) packages for maximum space-saving flexibility
- Cost-effective plastic surface-mounted RAM packages on an epoxy laminate (FR4) substrate
- Single 5V (±10%) power supply
- Inputs and outputs directly TTL-compatible

DESCRIPTION:

The IDT8MP624/IDT8MP612 are 1024K/512K high-speed CMOS static RAMs constructed on an epoxy laminate substrate using four IDT71256 32K x 8 static RAMs (IDT8MP624) or two IDT71256 static RAMs (IDT8MP612) in plastic surface-mount packages. Functional equivalence to proposed monolithic static RAMs is achieved by utilization of an on-board decoder that interprets the higher order address A_{15} to select one of the two 32K 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 IDT8MP612 32K x 16 option, A_{15} needs to be externally grounded for proper operation.) Extremely high speeds are achieved by the use of IDT71256s fabricated in IDT's high-performance, high-reliability technology, CEMOS. This state-of-the-art technology, combined with innovative circuit design techniques, provides the fastest 1024K/512K static RAMs available.

The IDT8MP624/IDT8MP612 are available with access times as fast as 60ns over commercial temperature range, with maximum operating power consumption of only 1.7W (64K x 16 option). The module also offers a full standby mode of 110mW (max.).

The IDT8MP624/IDT8MP612 are offered in a 40-pin plastic SIP package, as well as a 40-pin DIP which conform to JEDEC standard pinouts.

All inputs and outputs of the IDT8MP824/IDT8MP612 are TTL-compatible and operate from a single 5V supply. (NOTE: Both GND pins need to be grounded for proper operation.) Fully asynchronous circuitry is used requiring no clocks or refreshing for operation, and provides equal access and cycle times for ease of use.
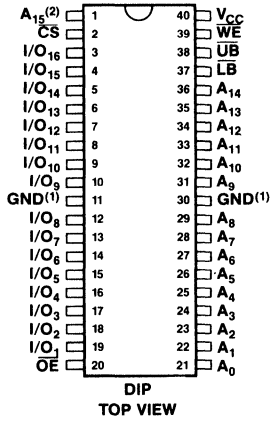
FUNCTIONAL BLOCK DIAGRAM
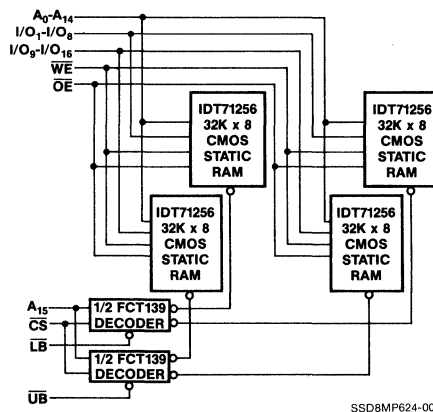
SSD8MP624-001

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## COMMERCIAL TEMPERATURE RANGE

JULY 1986

PIN CONFIGURATIONS

A_{15}(2)	1		40	V_{CC}
$\overline{CS}$	2		39	$\overline{WE}$
I/O_{16}	3		38	$\overline{UB}$
I/O_{15}	4		37	$\overline{LB}$
I/O_{14}	5		36	A_{14}
I/O_{13}	6		35	A_{13}
I/O_{12}	7		34	A_{12}
I/O_{11}	8		33	A_{11}
I/O_{10}	9		32	A_{10}
I/O_9	10		31	A_9
GND(1)	11		30	GND(1)
I/O_8	12		29	A_8
I/O_7	13		28	A_7
I/O_6	14		27	A_6
I/O_5	15		26	A_5
I/O_4	16		25	A_4
I/O_3	17		24	A_3
I/O_2	18		23	A_2
I/O_1	19		22	A_1
$\overline{OE}$	20		21	A_0

DIP
TOP VIEW

SSD8MP624-002

PIN NAMES

A_{0-15}	Addresses
I/O_{1-16}	Data Input/Output
$\overline{CS}$	Chip Select
$\overline{WE}$	Write Enable
V_{CC}	Power
GND	Ground
$\overline{OE}$	Output Enable
$\overline{UB}$	Upper Byte Control
$\overline{LB}$	Lower Byte Control
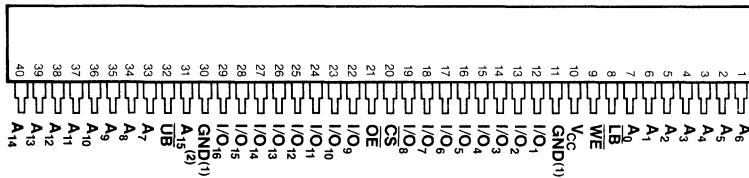
SIP
SIDE VIEW

SSD8MP624-003

NOTES:
1. Both GND pins need to be grounded for proper operation.
2. On IDT8MP612, 512K (32K x 16-bit) option, A_{15} (pin 1 — DIP; Pin 31 — SIP) requires external grounding for proper operation.

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