PRELIMINARY

HYUNDAI SEMICONDUCTOR HY51C464

65,536×4-Bit CMOS Dynamic RAM

AUGUST 1986

990622 (correct)

DESCRIPTION

The HY51C464 is a high speed 65,536×4-Bit dynamic Random Access Memory. Fabricated with Hyundai's HYCMOS technology, the HY51C464 offers features not provided by an NMOS dynamic RAM: Static Column Mode for high data bandwidth, fast usable speed, and CMOS standly current and extended $\overline{RAS}$-Only refresh for low standby power. All inputs and outputs are compatible to both TTL and HCT logic families while the input and output capacitances are significantly lowered to allow increased system performance.

Static Column Mode operation allows random or sequential access of all 256 bits within a row simply by changing the column address. Because column address access time is as fast as 55 ns, a continuous data rate of over 13 million 4 bit nibbles per second can be achieved. The HY51C464 offers high performance while relaxing many critical system timing requirements for fast usable speed. These features make the HY51C464 ideally suited for graphics, digital signal processing, and high performance systems.

The HY51C464 offers a maximum standby current of 100 μA when $\overline{RAS} \geq V_{DD}-0.5V$. During standby (i.e. refresh only cycles), the refresh period can be extended to 32 ms to reduce the total current required to retain data to less than 230 μA (max.). The HY51C464 combines this low power with high density for portable and battery backup applications.

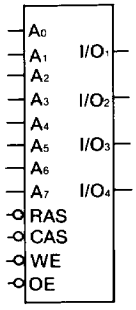
FEATURES

- **Static Column Mode Operation**
  - **Continuous data rate over 13 MHz**
  - **Random access from address within row**
  - **t_{CAC} = 25, 30, 35 ns**
  - **t_{OAC} = 20, 25, 30 ns**
- **Low Input/Output Capacitance**
- **Low Power Data Retention**
  - **Standby current, CMOS—100 μA (max.)**
  - **Refresh period, $\overline{RAS}$-Only—32 ms (max.)**
  - **Data Retention Current—230 μA (max.)**
- **TTL and HCT Compatible**
- **High Reliability Plastic—18 Pin DIP**

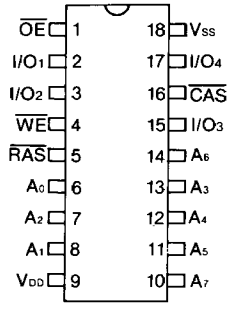
PIN NAMES SELECTION GUIDE

	HY51C464-12	HY51C464-15	HY51C464-20
Maximum Access Time (ns)	120	150	200
Maximum Column Address Access Time (ns)	55	65	85
Maximum CMOS Standby Current (mA)	0.1	0.1	0.1

LOGIC SYMBOL



PIN CONNECTIONS



(TOP VIEW)

PIN NAMES

$\overline{RAS}$	Row Address Strobe
$\overline{CAS}$	Column Address Strobe
$\overline{WE}$	Write Enable
$\overline{OE}$	Output Enable
A_0—A_7	Address Inputs
I/O_1—I/O_4	Data In/Data Out
V_{DD}	Power Supply (+5V)
V_{SS}	Ground

HYUNDAI SEMICONDUCTOR

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