SN74200

SN74200 TRI-STATE®
256-bit random access memory

256-bit random access memory (open collector)

general description

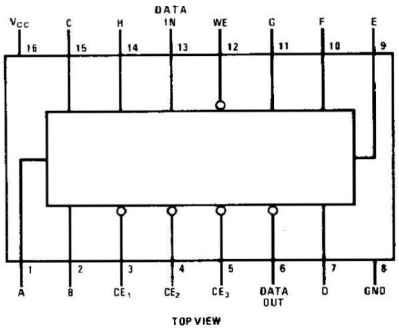
The 74200 and the DM8582 are 256 x 1 read/write random access. TTL memories which can be used in applications ranging from scratch-pad to main memories. Eight address inputs select the proper bit-location and a Write-Enable input determines whether the read mode or write mode is chosen. Three chip-enable inputs determine whether the output is in the conventional logical "1" or logical "0" state or whether it is gated into the off-state or the high-impedance state 74200. The off-state and high-impedance states are useful when connection is made to a common bus-line.

features

- 40 ns typical address access time, 74200
- 50 ns typical address access time,
- 20 ns typical chip select access time
- <2 mW/bit typical power dissipation

connection diagram

Dual-In-Line Package



TOP VIEW

truth table

CE	WE	OPERATION	OUTPUT (DM8582)	OUTPUT (DM74200)
L	L	Write	Logical "1" (Open Collector)	High Z
L	H	Read	$\overline{D}$ (Complement of Stored Data)	$\overline{D}$ (Complement of Stored Data)
H	L	Do Nothing	Logical "1"	High Z
H	H	Do Nothing	Logical "1"	High Z

absolute maximum ratings (Note 1)

Supply Voltage	7V
Input Voltage	5.5V
Output Voltage	5.5V
Operating Temperature Range DM74200, DM8582	0°C to +70°C
Storage Temperature Range	−65°C to +150°C
Lead Temperature (Soldering, 10 sec)	300°C

electrical characteristics

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Logical "1" Input Voltage	V_{CC} = 4.75V	2.0			V
Logical "0" Input Voltage	V_{CC} = 4.75V			0.8	V
Logical "1" Output Voltage	V_{CC} = 4.75V, I_{SOURCE} = 10 mA	2.4			V
Logical "1" Output Current	V_{CC} = 5.25V, V_{OUT} = 5.5V			50	μA
Logical "0" Output Voltage	V_{CC} = 4.75V, I_{SINK} = 24 mA			0.4	V
Third State Output Current	V_{CC} = 5.25V, V_{OUT} = 0.4V or 2.4V	−40		+40	μA
Logical "1" Input Current	V_{CC} = 5.25V, V_{IN} = 2.4V V_{IN} = 5.5V			25 1.0	μA mA
Logical "0" Input Current	V_{CC} = 5.25V, V_{IN} = 0.4V			−1.0	mA
Output Short Circuit Current (Note 3)	V_{CC} = 5.25V, V_{OUT} = 0V	−40		−80	mA
Supply Current	V_{CC} = 5.0V		99 96	130 125	mA mA
Input Clamp Voltage	V_{CC} = 4.75V, I_{IN} = −12 mA			−1.5	V
Output Ground Clamp Voltage	I_{OUT} = 12 mA			−1.5	V
Address Access Time, t_{AA}	V_{CC} = 5.0V		50 40		ns ns
Chip Select Access Time, t_{ACS}			20		ns
Chip Select Recovery Time, t_{RCS}	T_A = 25°C		20		ns
Write Enable Pulsewidth, t_{WP}	R_L = 300Ω		25		ns
Sense Recovery Time, t_{SR}	C_L = 30 pF		40		ns

Note 1: "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. Except for "Operating Temperature Range" they are not meant to imply that the devices should be operated at these limits. The table of "Electrical Characteristics" provides conditions for actual device operation.

Note 2: Unless otherwise specified min/max limits apply across the 0°C to 70°C range for the 74200 and 8582. All typicals are given for V_{CC} = 5.0V and T_A = 25°C.

Note 3: Only one output at a time should be shorted.