Microtech SEMICONDUCTORS

MS5832

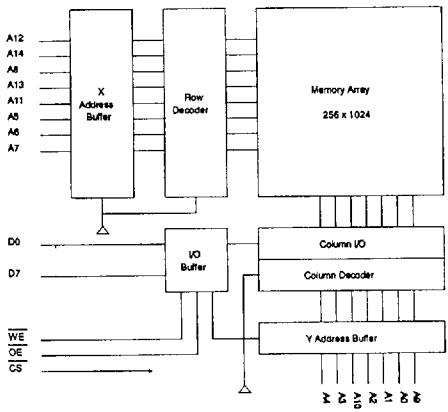
262,144 bit Ultra Fast CMOS Static RAM

MONOLITHIC MEMORIES

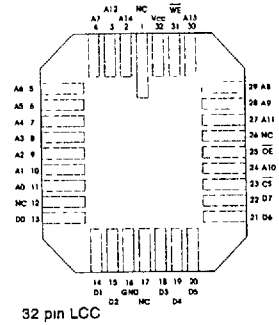
Features

- Full military temperature range
- Very fast access times - 15/20/25ns
- Single 5V power supply
- Low power consumption - 120mA max
- Completely static operation
- Equal access and cycle times
- Battery back-up operation
- CECC approval pending

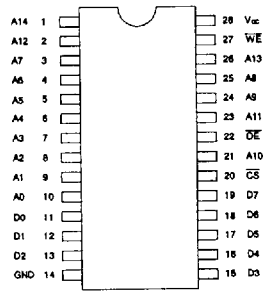
Block Diagram



Pin Assignments



32 pin LCC



28 pin DIL and 28 pin Flat-Pack

Pin Functions

A0-A14	Address Inputs
D0-7	Data Input/Output
$\overline{CS}$	Chip Select
$\overline{OE}$	Output Enable
$\overline{WE}$	Write Enable
Vcc	Power(+5V)

Ordering Information

MS5 832 J BSS2 - 20

- MS5: CMOS Ultra Fast Static RAM
- 832: 32K X 8
- J: Package Style
  - J - 28 pin 0.600 body ceramic Dil
  - SJ - 28 pin,0.300 body ceramic Dil
  - W - 32 pin ceramic LCC
  - F - 28 pin ceramic Flat-Pack
- BSS2: Released to BBS9400 (Blank = Screened in accordance with MS8 Module Flow)
- 20: Speed:
  - -15ns
  - -20ns
  - -25ns

262,144 bit Ultra Fast CMOS Static RAM

Recommended DC Operating Conditions (T_a = -55 to +125°C)

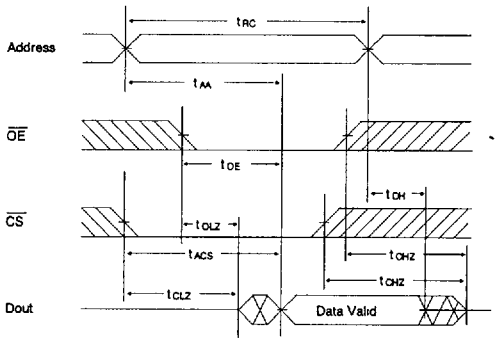
Item		Symbol	min.	typ.	max.	Unit
Supply Voltage	-15	V_{CC}	4.75	5.0	5.25	V
	-20/25		4.5	5.0	5.5	
Input High Voltage		V_{IH}	2.2	-	V_{CC} + 0.3	V
Input Low Voltage		V_{IL}	-0.3*	-	0.8	V

* VIL = -3.0V Min. for pulse width less than 20ns

Read Cycle (All units in ns)

Item	Symbol	-15		-20		-25	
		min	max.	min.	max.	min.	max.
Read Cycle Time	t_{RC}	15	-	20	-	25	-
Address Access Time	t_{AA}	-	15	-	20	-	25
Chip Select Access Time	t_{ACS}	-	15	-	20	-	25
Output Enable to Output Valid	t_{OE}	-	8	-	10	-	12
Output Hold from Address Change	t_{OH}	5	-	5	-	5	-
Chip Selection to Output Low Z	t_{CLZ}	3	-	3	-	3	-
Output Enable to Output in Low Z	t_{OLZ}	2	-	2	-	2	-
Chip Deselection to Output in High Z	t_{CHZ}	-	8	-	9	-	10
Output Disable to Output in High Z	t_{OHZ}	-	7	-	8	-	9

Timing Waveform of Read Cycle



Category S2 Screening Level B

PRE CAP INSPECTION
BS9400 1.2.10 LEVEL B

HIGH TEMPERATURE STORAGE
BS9400 1.2.6.3
150°C For 24 Hours

RAPID CHANGE OF TEMPERATURE
BS9400 1.2.6.13
10 CYCLES -65°C TO +150°C

ACCELERATION STEADY STATE
BS9400 1.2.6.9
294000m/s^2 Direction Y1 *

ELECTRICAL TESTS AT 25°C

BURN-IN SCREEN
BS9400 1.2.9.2 160 Hours min at 125°C

FINAL ELECTRICAL TESTS,
STATIC & DYNAMIC,
AT 25°C, 125C & -55C

FINE AND GROSS LEAK TESTS
BS9400 1.2.6.14

SAMPLE TESTS to Groups A,B,C
as appropriate

* Direction Y1 is the direction which tends to separate the bonds

DC and Operating Characteristics (V_{CC} = 5V ±10%, GND = OV, T_a = -55 to +125°C)

Item		Symbol	Test Condition	min.	typ.	max.	Unit
Input Leakage Current		$\|I_{LI}\|$	V_{IN} = GND to V_{CC}	-1	-	1	µA
Output Leakage Current		$\|I_{LO}\|$	$\overline{CS}$ = V_{IH} or OE = V_{IH}, $V_{I/O}$ = GND to V_{CC}	-1	-	1	µA
Operating Power Supply Current		I_{CC1}	$\overline{CS}$ = V_{IL}, $I_{I/O}$ = 0mA	-	30	80	mA
Average Operating Supply Current	-15	I_{CC2}	Min.Cycle, duty = 100%, $I_{I/O}$ = 0mA	-	100	130	mA
	-20			-	85	120	
	-25			-	75	120	
Standby Power Supply Current		I_{SB1}	$\overline{CS}$ ≥ V_{CC} -0.2V	-	-	1	mA
		I_{SB2}	$\overline{CS}$ = V_{IH}	-	15	25	mA
Low Level Output Voltage		V_{OL}	I_{OL} = 8.0 mA	-	-	0.4	V
High Level Output Voltage		V_{OH}	I_{OH} = - 4.0 mA	2.4	-	-	V

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