

ACCUTEK
MICROCIRCUIT CORPORATION

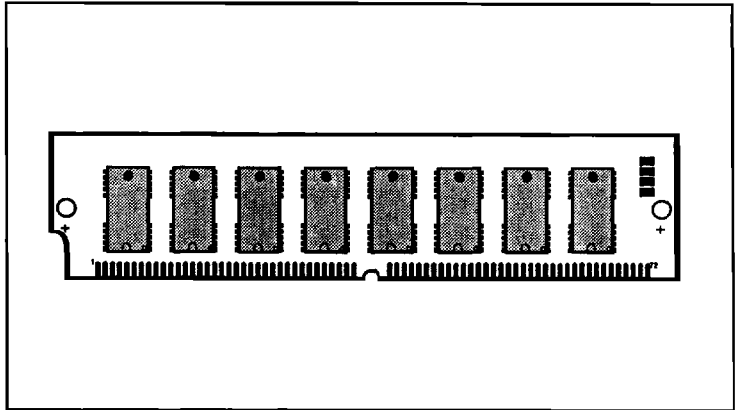
AK532512WP
524,288 Word by 32 Bit CMOS
Dynamic Random Access Memory

DESCRIPTION

The Accutek AK532512 high density memory module is a CMOS dynamic RAM organized in 512K x 32 bit words. The module consists of sixteen standard 256K x 4 DRAMs in plastic SOJ packages. The assembly has eight drams mounted on each side of a printed circuit board in a 72 pad leadless SIM configuration.

This configuration allows socket-mounting of large quantities of memory in applications where high density and ease of inserting additional memory are important.

The operation of the AK532512 is identical to sixteen 256K x 4 Drams. There are four CAS lines and four RAS lines. On each bank of 256K x 32, independent byte control is accomplished by the four CAS lines. Each separate CAS line controls four 256K x 4 Drams. Two banks of 32 bits are controlled by the two pairs of RAS lines. A sixteen bit data path can be produced by connecting DQ₁ to DQ₁₇, DQ₂ to DQ₁₈ and alternately strobing RAS₀ with RAS₁ and RAS₂ with RAS₃.



FEATURES

- 524,288 x 32 bit organization
- 72 pin Single In-Line Module
- Multiple CAS and RAS lines allow x16 or x32 bit widths
- CAS-before-RAS Refresh, RAS-only Refresh or Hidden refresh
- Operating free air temperature 0°C to 70°C
- Single 5 Volt Power Supply
- 512 Refresh Cycles, 8mSEC

- Power
4.00 Watt Max Active (60nS)
3.56 Watt Max Active (70 nS)
3.124 Watt Max Active (80 nS)
88 mW Max Standby
- Available in Fast Page Mode and Static Column Mode versions
- Available in leadless SIM or leaded Zip versions
- Downward compatible with AK532256
- Upward compatible with AK5321024, AK5322048, AK5324096 and AK5328192

ADDITIONAL OPTIONS AVAILABLE

- 256K x 32 version, AK532256
- 1 Meg x 32 version, AK5321024
- 2 Meg x 32 version, AK5322048

PIN NOMENCLATURE

A0 - A8	Address Inputs
DQ1 - DQ32	Data In/Data Out
CAS0 - CAS3	Column Address Strobe
RAS0 - RAS3	Row Address Strobe
WE	Write Enable
PD1 - PD4	Presence Detect
Vcc	5v Supply
Vss	Ground
NC	No Connect

PIN ASSIGNMENT

PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL
1	Vss	19	NC	37	NC	55	DQ12
2	D1	20	DQ5	38	NC	56	DQ28
3	DQ17	21	DQ21	39	Vss	57	DQ13
4	DQ2	22	DQ6	40	CAS0	58	DQ29
5	DQ18	23	DQ22	41	CAS2	59	Vcc
6	DQ3	24	DQ7	42	CAS3	60	DQ30
7	DQ19	25	DQ23	43	CAS1	61	DQ14
8	DQ4	26	DQ8	44	RAS0	62	DQ31
9	DQ20	27	DQ24	45	RAS1	63	DQ15
10	Vcc	28	A7	46	NC	64	DQ32
11	NC	29	NC	47	WE	65	DQ16
12	A0	30	Vcc	48	NC	66	NC
13	A1	31	A8	49	DQ9	67	PD1
14	A2	32	NC	50	DQ25	68	PD2
15	A3	33	RAS3	51	DQ10	69	PD3
16	A4	34	RAS2	52	DQ26	70	PD4
17	A5	35	NC	53	DQ11	71	NC
18	A6	36	NC	54	DQ27	72	Vss

MODULE OPTIONS

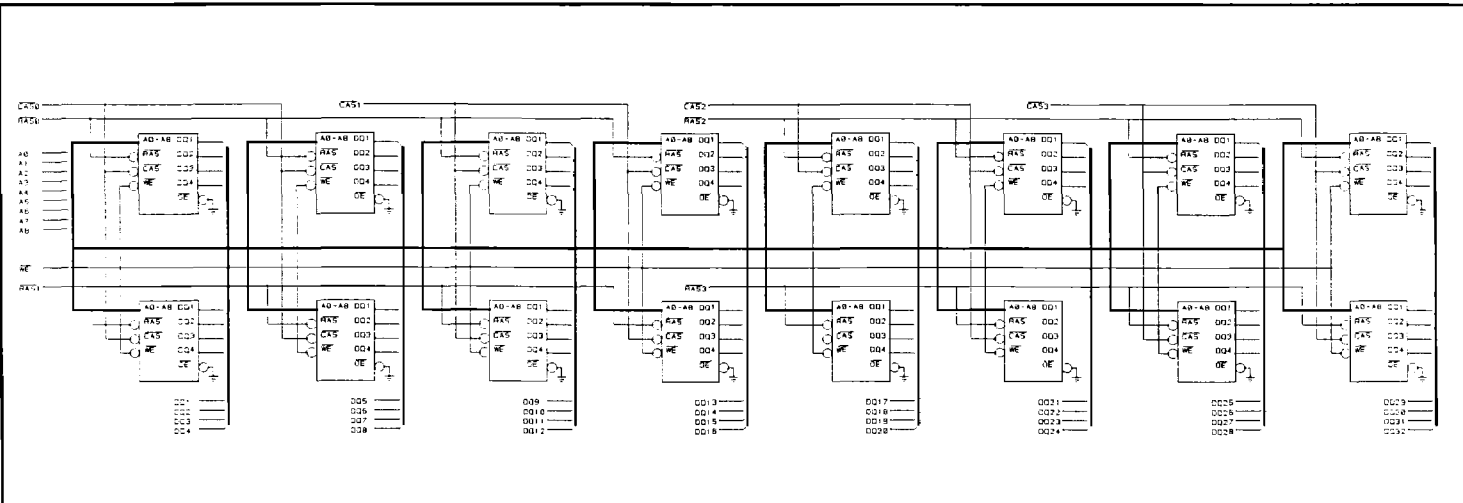
Leadless SIM: AK532512W

Leaded ZIP: AK532512Z

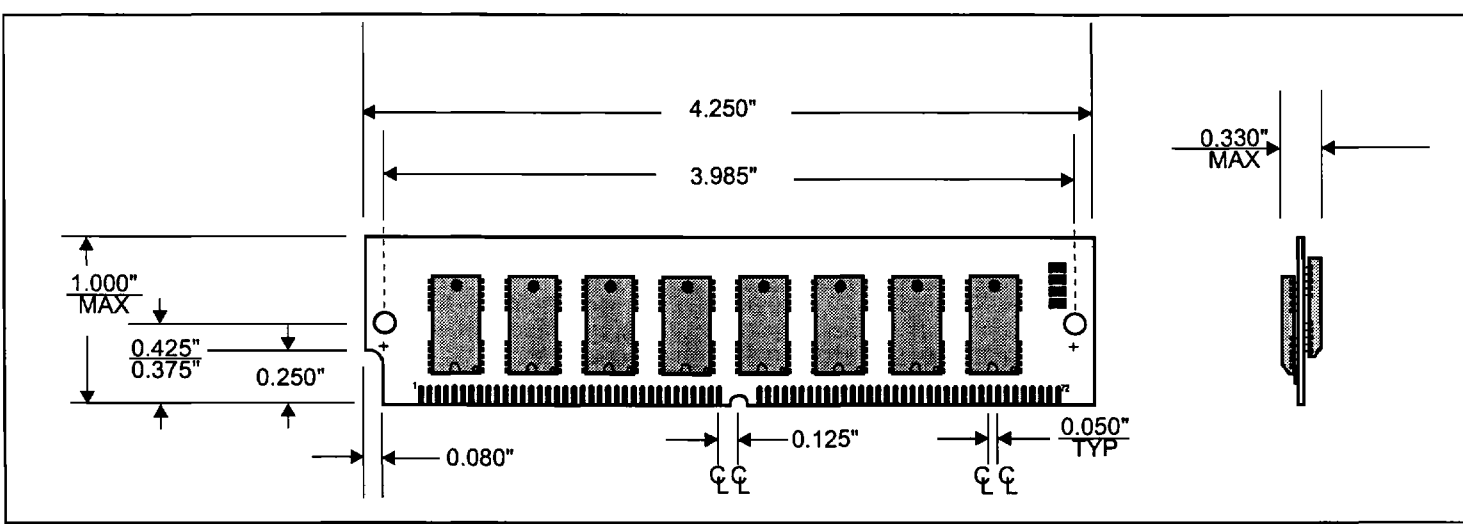
Presence Detect -

	-60	-70	-80
PD1	NC	NC	NC
PD2	Vss	Vss	Vss
PD3	NC	Vss	NC
PD4	NC	NC	Vss

FUNCTIONAL DIAGRAM



MECHANICAL DIMENSIONS



ORDER INFORMATION

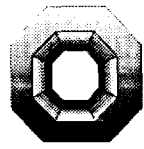
PART NUMBER CODING INTERPRETATION

Position	1	2	3	4	5	6	7	8
1	Product							
	AK = Accutek Memory							
2	Type							
	4 = Dynamic RAM							
	5 = CMOS Dynamic RAM							
	6 = Static RAM							
3	Organization/Word Width							
	1 = by 1 16 = by 16							
	4 = by 4 32 = by 32							
	8 = by 8 36 = by 36							
	9 = by 9							
4	Size/Bits Depth							
	64 = 64K		4096 = 4 MEG					
	256 = 256K		8192 = 8 MEG					
	1024 = 1 MEG		16384 = 16 MEG					

The numbers and coding on this page do not include all variations available, but are shown as examples of the most widely used variations. Contact Accutek if other information is required.

Position 1 2 3 4 5 6 7 8

5	Package Type	
	G = Single In-Line Package (SIP)	
	S = Single In-Line Module (SIM)	
	D = Dual In-Line Package (DIP)	
	W = .050 Inch Pitch Edge Connect	
	Z = Zig-Zag In-Line Package (ZIP)	
6	Special Designation	
	P = Page Mode	
	N = Nibble Mode	
	K = Static Column Mode	
	W = Write Per Bit Mode	
	V = Video Ram	
7	Separator	
	- = Commercial 0°C to +70°C	
	M = Military Equivalent Screened (-55°C to +125°C)	
	I = Industrial Temperature Tested (-45°C to +85°C)	
	X = Burned In	
8	Speed (first two significant digits)	
	DRAMS	SRAMS
	60 = 60 nS	8 = 8 nS
	70 = 70 nS	10 = 10 nS
	80 = 80 nS	15 = 15 nS
		20 = 20 nS



ACCUTEK MICROCIRCUIT CORPORATION
 BUSINESS CENTER at NEWBURYPORT
 2 NEW PASTURE ROAD, SUITE 1
 NEWBURYPORT, MA 01950-4054
 PHONE: 978-465-6200 FAX: 978-462-3396
 Email: accutek@seacoast.com
 Internet: www.accutekmicro.com

Accutek Reserves the right to make changes in specifications at any time and without notice. Accutek does not assume any responsibility for the use of any circuitry described; no circuit patent licenses are implied. Preliminary data sheets contain minimum and maximum limits based upon design objectives, which are subject to change upon full characterization over the specific operating conditions.