

DESCRIPTION

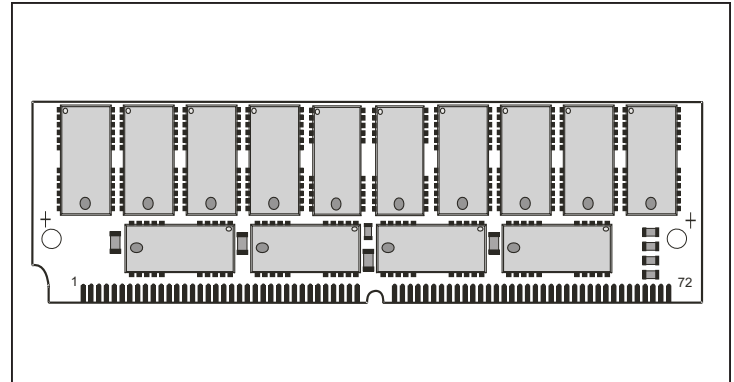
The Accutek AK5368192W high density memory module is a CMOS dynamic RAM organized in 8192K x 36 bit words. The module consists of sixteen standard 4 Meg x 4 DRAMs and eight 4 Meg x 1 DRAMs, each in plastic SOJ packages. The assembly has 14 drams mounted on the front side and 10 drams mounted on the back 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 AK5368192W is identical to sixteen 4M x 4 plus eight 4M x 1 Drams. There are four $\overline{\text{CAS}}$ lines and four $\overline{\text{RAS}}$ lines. On each bank of 4M x 36, independent byte control is accomplished by four $\overline{\text{CAS}}$ lines. Each separate $\overline{\text{CAS}}$ line controls two 4M x 4 Drams along with a 4M x 1 Dram with data in tied to data out to form a 9 bit byte. Two banks of 36 bits are controlled by the two pairs of $\overline{\text{RAS}}$ lines. An eighteen bit data path can be produced by connecting DQ₀ to DQ₁₈, DQ₁ to DQ₁₉, etc. and alternately strobing RAS₀ with RAS₁ and RAS₂ with RAS₃.

FEATURES

- 8,388,608 x 36 bit organization
- 72 pad Single In-Line Module
- Multiple CAS and RAS lines allow x18 or x36 bit widths
- CAS-before-RAS, RAS-only or hidden refresh
- Power
7.30 Watt Max Active (60nS)
6.68 Watt Max Active (70 nS)
252 mW Max Standby
- Operating free air temperature 0°C to 70°C



- Single 5 Volt Power Supply
- 2048 Refresh Cycles, 32 mSEC
- Available in Fast Page Mode and Static Column mode versions
- Available in leadless (W) or leaded Zip (Z) versions
- Downward compatible with AK5364096W through AK536256W sizes

EXAMPLES

AK5368192WP-70

8Meg x 36 CMOS Dynamic RAM, SIM, Page Mode, Commercial 70 nSEC Access Time

ADDITIONAL OPTIONS AVAILABLE

- 4 Meg x 36 version, drams on one side only
Reference Part No. AK5364096W4096 Refresh Cycles, 64 mSEC available for all module sizes

PIN NOMENCLATURE

DQ ₀ - DQ ₃₅	Data In/Data Out
A ₀ - A ₁₀ , 2K Refresh	Address Inputs
A ₀ - A ₁₁ , 4K Refresh	Address Inputs
$\overline{\text{CAS}}_0$ - $\overline{\text{CAS}}_3$	Column Address Strobe
$\overline{\text{RAS}}_0$ - $\overline{\text{RAS}}_3$	Row Address Strobe
$\overline{\text{WE}}$	Write Enable
PD ₁ - PD ₄	Presence Detect
V _{cc}	5v Supply
V _{ss}	Ground
NC	No Connect

PIN ASSIGNMENT

PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL
1	V _{ss}	19	A ₁₀	37	DQ ₁₇	55	DQ ₁₂
2	DQ ₀	20	DQ ₄	38	DQ ₃₅	56	DQ ₃₀
3	DQ ₁₈	21	DQ ₂₂	39	V _{ssV}	57	DQ ₁₃
4	DQ ₁	22	DQ ₅	40	$\overline{\text{CAS}}_0$	58	DQ ₃₁
5	DQ ₁₉	23	DQ ₂₃	41	$\overline{\text{CAS}}_2$	59	V _{cc}
6	DQ ₂	24	DQ ₆	42	$\overline{\text{CAS}}_3$	60	DQ ₃₂
7	DQ ₂₀	25	DQ ₂₄	43	$\overline{\text{CAS}}_1$	61	DQ ₁₄
8	DQ ₃	26	DQ ₇	44	$\overline{\text{RAS}}_0$	62	DQ ₃₃
9	DQ ₂₁	27	DQ ₂₅	45	$\overline{\text{RAS}}_1$	63	DQ ₁₅
10	V _{cc}	28	A ₇	46	NC	64	DQ ₃₄
11	NC	29	A ₁₁	47	$\overline{\text{WE}}$	65	DQ ₁₆
12	A ₀	30	V _{cc}	48	NC	66	NC
13	A ₁	31	A ₈	49	DQ ₉	67	PD ₁
14	A ₂	32	A ₉	50	DQ ₂₇	68	PD ₂
15	A ₃	33	$\overline{\text{RAS}}_3$	51	DQ ₁₀	69	PD ₃
16	A ₄	34	$\overline{\text{RAS}}_2$	52	DQ ₂₈	70	PD ₄
17	A ₅	35	DQ ₂₆	53	DQ ₁₁	71	NC
18	A ₆	36	DQ ₈	54	DQ ₂₉	72	V _{ss}

MODULE OPTIONS

Leadless SIM: AK5368192W

Leaded ZIP: AK5368192Z

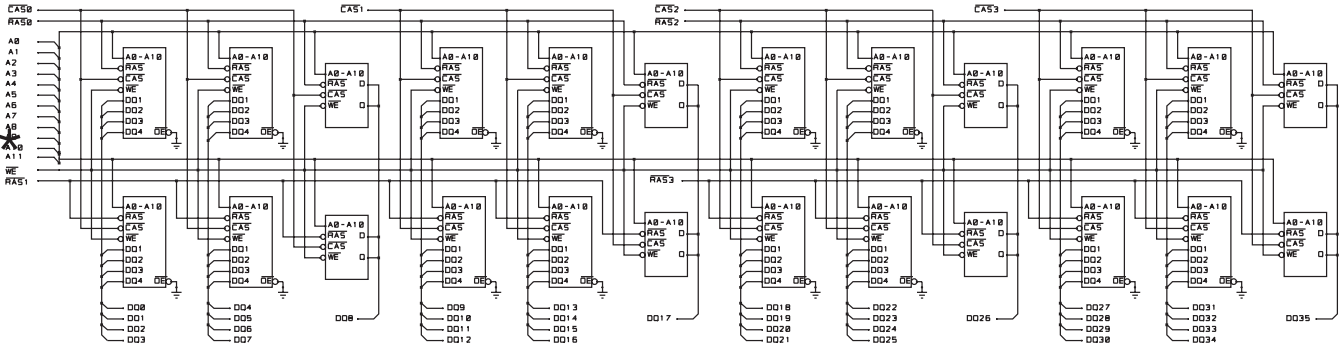
Presence Detect - 8 Meg x 36

	-60	-70
PD ₁	NC	NC
PD ₂	V _{ss}	V _{ss}
PD ₃	NC	V _{ss}
PD ₄	NC	NC

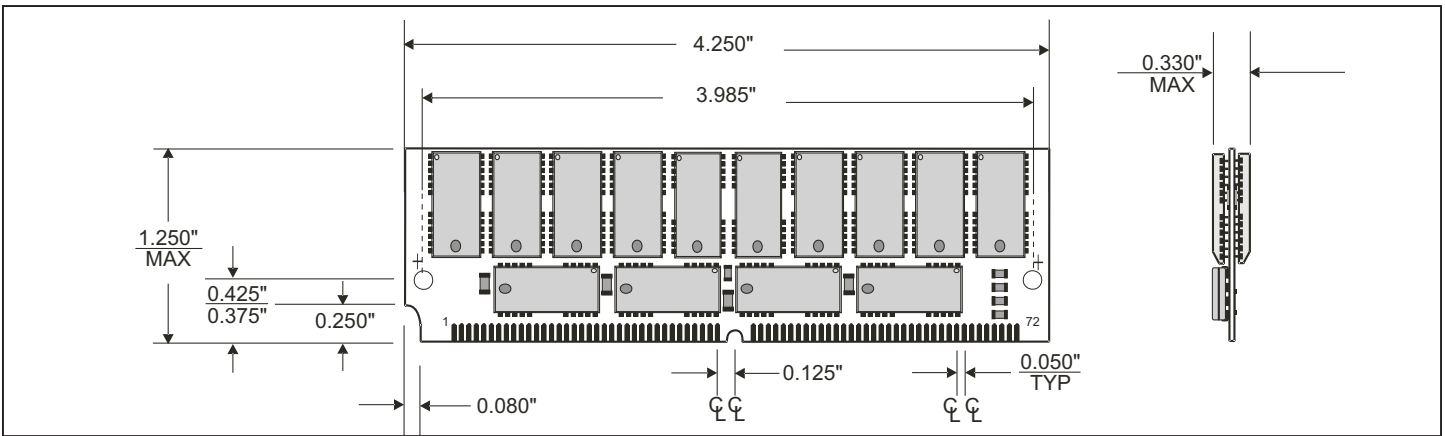
4 Meg x 36

	-60	-70
	V _{ss}	V _{ss}
	NC	NC
	NC	V _{ss}
	NC	NC

FUNCTIONAL DIAGRAM



MECHANICAL DIMENSIONS



ORDER INFORMATION

PART NUMBER CODING INTERPRETATION

Position	1	2	3	4	5	6	7	8
1 Product								
AK = Accuthek 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 Accuthek 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	12 = 12 nS
80 = 80 nS	15 = 15 nS



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