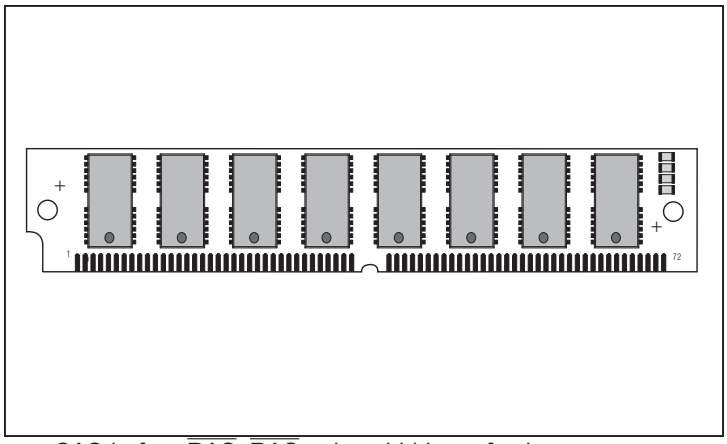
ACCUTEK
MICROCIRCUIT CORPORATION

AK5364096W
4,194,304 Word by 36 Bit CMOS Dynamic Random Access Memory

DESCRIPTION

The Accutek AK5364096W high density memory module is a CMOS Dynamic RAM organized in 4096K x 36 bit words. The module consists of eight standard 4 Meg x 4 DRAMs and four 4 Meg x 1 DRAMs in plastic SOJ packages. The 4 Meg x 4 DRAMs are mounted on the front surface and the 4 Meg x 1 parity DRAMs are mounted on the back surface of a printed circuit board with a low profile height of only 0.875" in a 72 pin 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 AK5364096W is identical to eight 4Meg x 4 plus four 4Meg x 1 DRAMs. There are four $\overline{CAS}$ lines and two $\overline{RAS}$ lines. Independent byte control is accomplished by four $\overline{CAS}$ lines. Each separate $\overline{CAS}$ line controls two 4Meg x 4 DRAMs, along with a 4Meg x 1 DRAM with data in tied to data out to form a 9 bit byte. The bank of 36 bits is controlled by the two $\overline{RAS}$ lines. An eighteen bit data path can be produced by connecting DQ_0 to DQ_{18}, DQ_1 to DQ_{19}, etc. and alternately strobing $\overline{RAS_0}$ with $\overline{RAS_2}$.



FEATURES

- 4,194,304 x 36 bit organization
- Low profile board height of 0.875 inch
- 72 pad Single In-Line Module
- Multiple $\overline{CAS}$ and $\overline{RAS}$ lines allow x18 or x36 bit widths
- Power:
  7.92 Watt Max Active (60nS)
  6.60 Watt Max Active (70 nS)
  66 mW Max Standby
- CAS-before-$\overline{RAS}$, $\overline{RAS}$-only or hidden refresh
- Single 5 Volt Power Supply
- 2048 Refresh Cycles, 32 mSEC
- Available in Fast Page Mode, EDO and Static Column Mode
- Available in leadless SIM or leaded ZIP versions
- Downward compatible with AK5362048W, AK5361024W, AK536512W and AK536256W
- Upward compatible with AK5368192W
- Operating free air temperature 0^0C to 70^0C

EXAMPLE

AK5364096WP-70

4Meg x 36 CMOS Dynamic RAM, SIM, Page Mode, Commercial 70nSEC Access Time

PIN NOMENCLATURE

A_0 - A_{10}	Address Inputs
DQ_0 - DQ_{35}	Data In/Data Out
$\overline{CAS_0}$ - $\overline{CAS_3}$	Column Address Strobe
$\overline{RAS_0}$, $\overline{RAS_2}$	Row Address Strobe
$\overline{WE}$	Write Enable
$\overline{OE}$	Output Enable
PD_1 - PD_4	Presence Detect
Vcc	5v Supply
Vss	Ground
NC	No Connect

MODULE OPTIONS

Leadless SIM: AK5364096W
Leaded ZIP: AK5364096Z

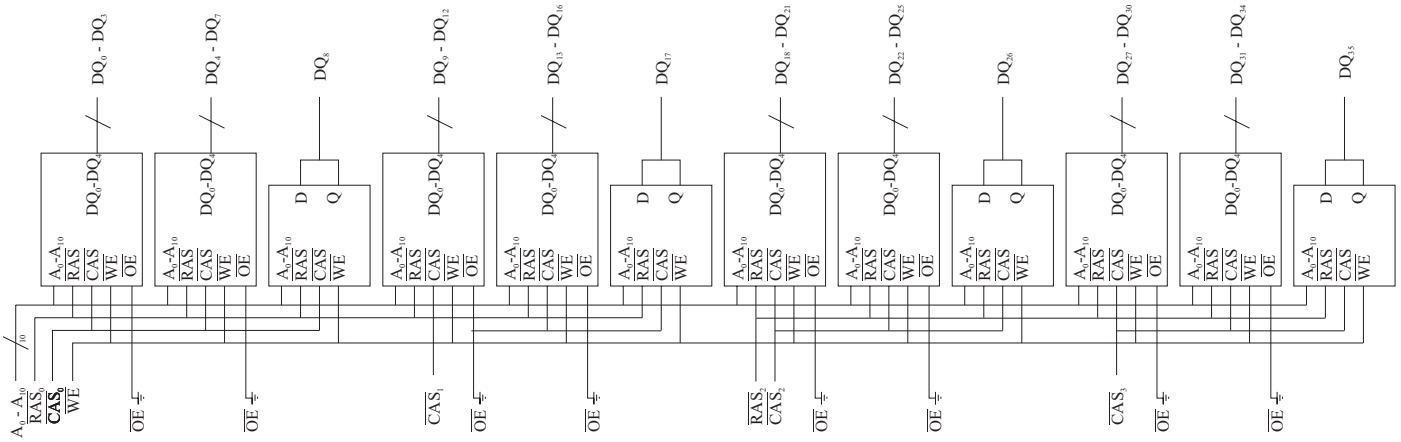
PIN ASSIGNMENT

PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL
1	Vss	19	A10	37	DQ17	55	DQ12
2	DQ0	20	DQ4	38	DQ35	56	DQ30
3	DQ18	21	DQ22	39	Vss	57	DQ13
4	DQ1	22	DQ5	40	CAS0	58	DQ31
5	DQ19	23	DQ23	41	CAS2	59	Vcc
6	DQ2	24	DQ6	42	CAS3	60	DQ32
7	DQ20	25	DQ24	43	CAS1	61	DQ14
8	DQ3	26	DQ7	44	RAS0	62	DQ33
9	DQ21	27	DQ25	45	NC	63	DQ15
10	Vcc	28	A7	46	NC	64	DQ34
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	A9	50	DQ27	68	PD2
15	A3	33	NC	51	DQ10	69	PD3
16	A4	34	RAS2	52	DQ28	70	PD4
17	A5	35	DQ26	53	DQ11	71	NC
18	A6	36	DQ8	54	DQ29	72	Vss

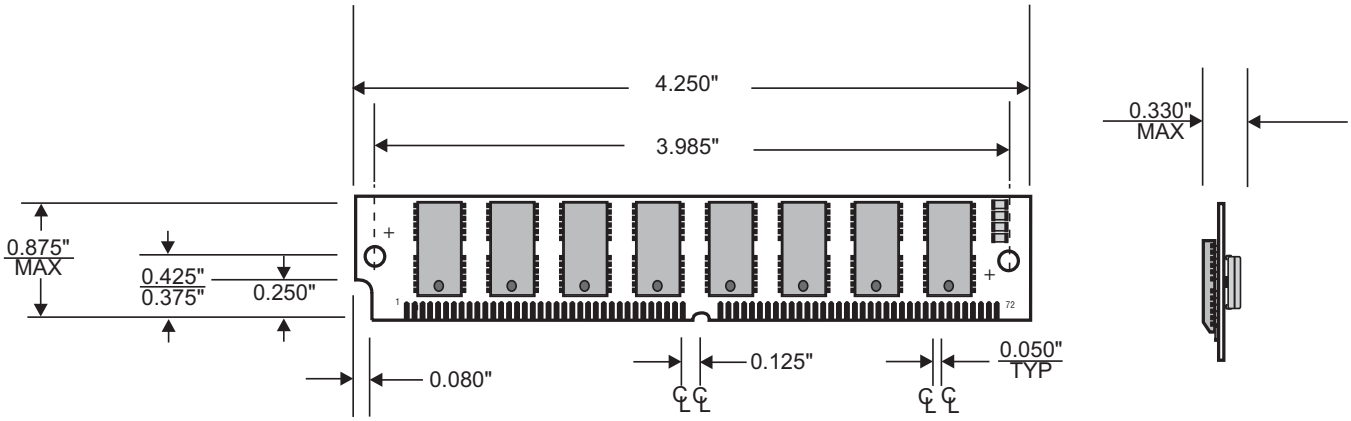
Presence Detect -

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

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 = b y 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 0^0C to +70^0C
M = Military Equivalent Screened (-55^0C to +125^0C)
I = Industrial Temperature Tested (-45^0C to +85^0C)
X = Burned In

8 Speed (first two significant digits)

DRAMS			SRAMS		
50	=	50 nS	8	=	8 nS
60	=	60 nS	12	=	12 nS
70	=	70 nS	15	=	15 nS

ACCUTEK
MICROCIRCUIT CORPORATION

5 NEW PASTURE ROAD
NEWBURYPORT, MA 01950-4040
PHONE: 978-465-6200 FAX: 978-462-3396
Email: sales@accutekmicro.com
Internet: www.accutekmicro.com