

# Accutec Microcircuit Corporation

**AK536512W**  
**524,288 Word by 36 Bit CMOS**  
**Dynamic Random Access Memory**

## DESCRIPTION

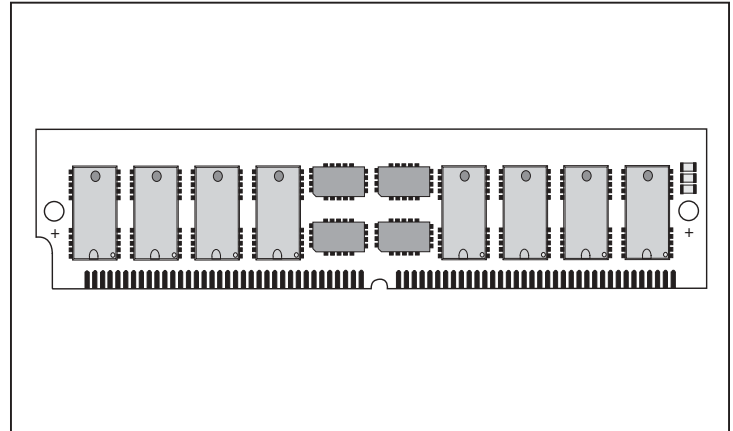
The Accutec AK536512W high density memory module is a CMOS dynamic RAM organized in 512K x 36 bit words. The module consists of sixteen standard 256K x 4 DRAMs in plastic SOJ packages and eight 256K x 1 DRAMs in PLCC packages. The assembly has 12 drams mounted on each side of a printed circuit board 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 AK536512 is identical to sixteen 256K x 4 plus eight 256K x 1 DRAMs. There are four CAS lines and four RAS lines. On each bank of 256K x 36, independent byte control is accomplished by four CAS lines. Each separate CAS line controls four 256K x 4 DRAMs and two 256K x 1 DRAMs 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 RAS lines. An eighteen bit data path can be produced by connecting DQ<sub>0</sub> to DQ<sub>18</sub>, DQ<sub>1</sub> to DQ<sub>19</sub>, etc. and alternately strobing RAS<sub>0</sub> with RAS<sub>1</sub> and RAS<sub>2</sub> with RAS<sub>3</sub>.

## FEATURES

- 524,288 x 36 bit organization
- 72 pad Single In-Line Module
- Multiple CAS and RAS lines allow x18 or x36 bit widths
- CAS-before-RAS refresh
- Operating free air temperature 0°C to 70°C
- Single 5 Volt Power Supply



- Power  
 5.41 Watt Max Active (70nS)  
 4.75 Watt Max Active (80 nS)  
 4.09 Watt Max Active (100 nS)  
 132 mW Max Standby
- 512 Refresh Cycles, 8 mSEC
- Available in Fast Page Mode and Static Column Mode versions
- Downward compatible with AK536256W
- Upward compatible with AK5361024W, AK5362048W, AK5364096W and AK5368192W

## PIN NOMENCLATURE

DQ <sub>0</sub> - DQ <sub>35</sub>	Data In/Data Out
A <sub>0</sub> - A <sub>8</sub>	Address Inputs
CAS <sub>0</sub> - CAS <sub>3</sub>	Column Address Strobe
RAS <sub>0</sub> - RAS <sub>3</sub>	Row Address Strobe
WE	Write Enable
PD	Presence Detect
Vcc	5v Supply
Vss	Ground
NC	No Connect

## MODULE OPTIONS

Leadless SIM: AK536512W  
 Leaded ZIP: AK536512Z

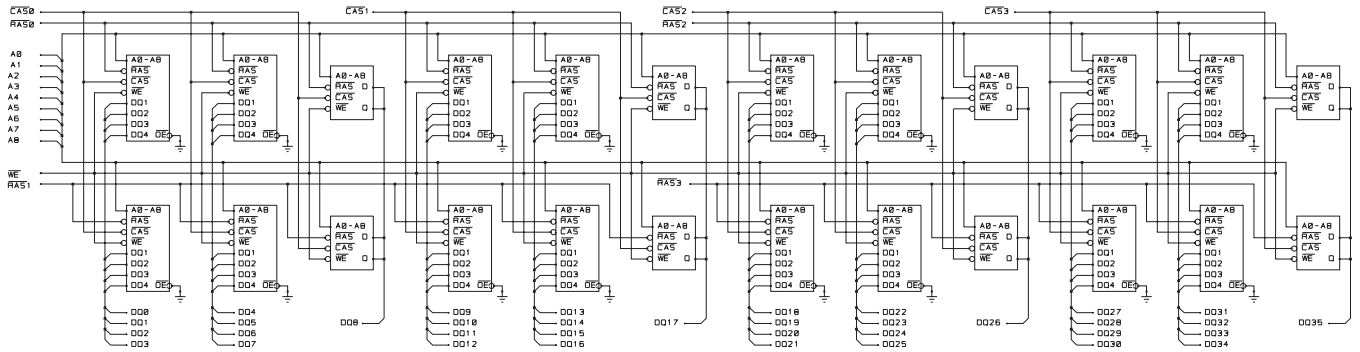
## PIN ASSIGNMENT

PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL
1	Vss	19	NC	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	RAS1	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	NC	50	DQ27	68	PD2
15	A3	33	RAS3	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

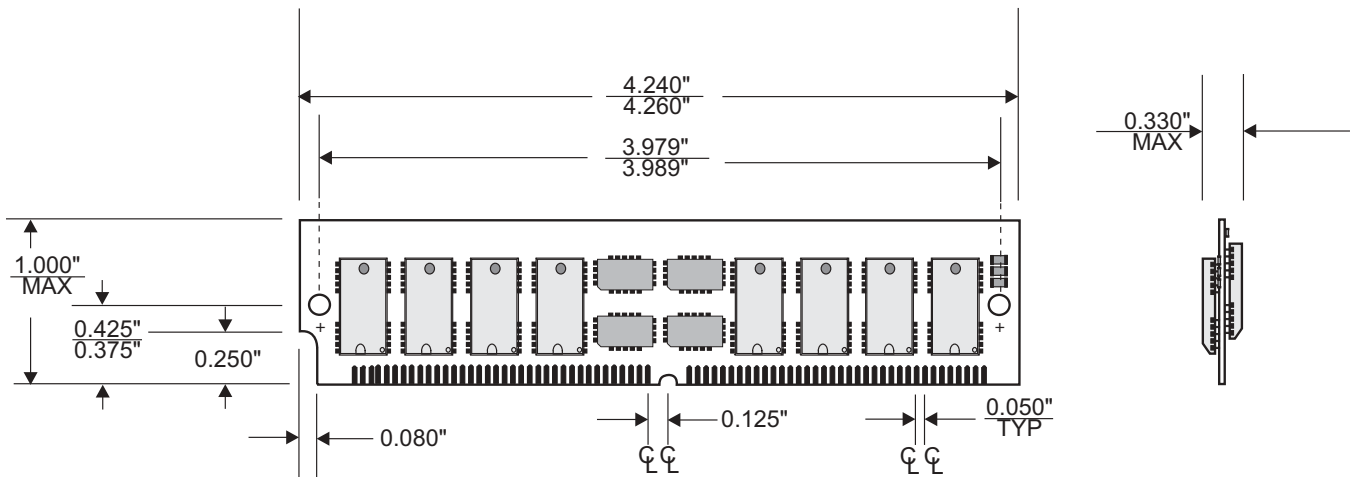
### Presence Detect -

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

# FUNCTIONAL DIAGRAM



# MECHANICAL DIMENSIONS



**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  
 E-Mail: sales@accutekmicro.com  
 Internet: www.accutekmicro.com

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