

# Accutek Microcircuit Corporation

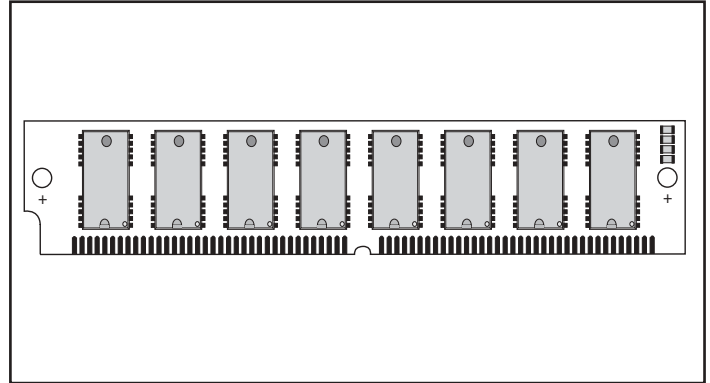
## AK5361024W 1,048,576 Word by 36 Bit CMOS Dynamic Random Access Memory

### DESCRIPTION

The Accutek AK5361024W high density memory module is a CMOS Dynamic RAM organized in 1024K x 36 bit words. The module consists of eight standard 1 Meg x 4 DRAMs in plastic SOJ packages mounted on the front side of a printed circuit board and four 1 Meg x 1 DRAMs in plastic SOJ packages mounted on the back side of a printed circuit board with a low profile height of only 0.875 inch 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 AK5361024W is identical to eight 1 Meg x 4 plus four 1 Meg x 1 DRAMs. There are four  $\overline{\text{CAS}}$  lines and two  $\overline{\text{RAS}}$  lines. Independent byte control is accomplished by four  $\overline{\text{CAS}}$  lines. Each separate  $\overline{\text{CAS}}$  line controls two 1Meg x 4 DRAMs, along with a 1 Meg 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  $\overline{\text{RAS}}$  lines. An eighteen bit data path can be produced by connecting  $\text{DQ}_0$  to  $\text{DQ}_{18}$ ,  $\text{DQ}_1$  to  $\text{DQ}_{19}$ , etc. and alternately strobing  $\overline{\text{RAS}}_0$  with  $\overline{\text{RAS}}_2$ .



### FEATURES

- 1,048,576 x 36 bit organization
- Low profile board height of 0.875 inch
- 72 pad Single In-Line Module
- Multiple  $\overline{\text{CAS}}$  and  $\overline{\text{RAS}}$  lines allow x18 or x36 bit widths
- $\overline{\text{CAS}}$ -before- $\overline{\text{RAS}}$ ,  $\overline{\text{RAS}}$ -only or hidden refresh
- Power
  - 7.26 Watt Max Active (60nS)
  - 6.16 Watt Max Active (70 nS)
  - 5.28 Watt Max Active (80 nS)
  - 66 mW Max Standby
- Single 5 Volt Power Supply
- 1024 Refresh Cycles, 16 mSEC
- Available in Fast Page Mode and Static Column Mode versions
- Available in leadless SIM or leaded ZIP versions
- Downward compatible with AK536512W and AK536256W
- Upward compatible with AK5362048W, AK5364096W and AK5368192W
- Operating free air temperature 0°C to 70°C

### PIN NOMENCLATURE

$\text{DQ}_0 - \text{DQ}_{35}$	Data In/Data Out
$\text{A}_0 - \text{A}_9$	Address Inputs
$\overline{\text{CAS}}_0 - \overline{\text{CAS}}_3$	Column Address Strobe
$\overline{\text{RAS}}_0$ & $\overline{\text{RAS}}_2$	Row Address Strobe
$\overline{\text{WE}}$	Write Enable
$\text{PD}_1 - \text{PD}_4$	Presence Detect
$\text{Vcc}$	5v Supply
$\text{Vss}$	Ground
NC	No Connect

### MODULE OPTIONS

Leadless SIM: AK5361024W

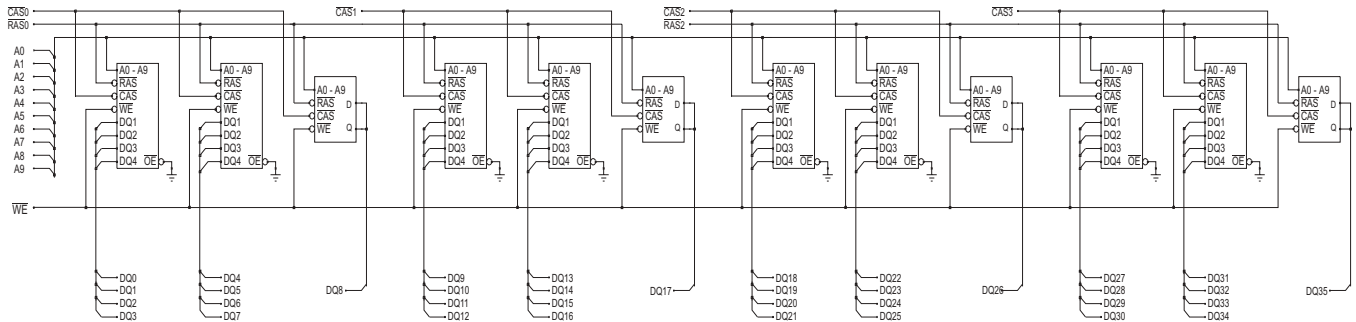
### PIN ASSIGNMENT

Pin #	Symbol	Pin #	Symbol	Pin #	Symbol	Pin #	Symbol
1	$\text{Vss}$	19	NC	37	$\text{DQ}_{17}$	55	$\text{DQ}_{12}$
2	$\text{DQ}_0$	20	$\text{DQ}_4$	38	$\text{DQ}_{35}$	56	$\text{DQ}_{30}$
3	$\text{DQ}_{18}$	21	$\text{DQ}_{22}$	39	$\text{Vss}$	57	$\text{DQ}_{13}$
4	$\text{DQ}_1$	22	$\text{DQ}_5$	40	$\overline{\text{CAS}}_0$	58	$\text{DQ}_{31}$
5	$\text{DQ}_{19}$	23	$\text{DQ}_{23}$	41	$\overline{\text{CAS}}_2$	59	$\text{Vcc}$
6	$\text{DQ}_2$	24	$\text{DQ}_6$	42	$\overline{\text{CAS}}_3$	60	$\text{DQ}_{32}$
7	$\text{DQ}_{20}$	25	$\text{DQ}_{24}$	43	$\overline{\text{CAS}}_1$	61	$\text{DQ}_{14}$
8	$\text{DQ}_3$	26	$\text{DQ}_7$	44	$\overline{\text{RAS}}_0$	62	$\text{DQ}_{33}$
9	$\text{DQ}_{21}$	27	$\text{DQ}_{25}$	45	NC	63	$\text{DQ}_{15}$
10	$\text{Vcc}$	28	$\text{A}_7$	46	NC	64	$\text{DQ}_{34}$
11	NC	29	NC	47	$\overline{\text{WE}}$	65	$\text{DQ}_{16}$
12	$\text{A}_0$	30	$\text{Vcc}$	48	NC	66	NC
13	$\text{A}_1$	31	$\text{A}_8$	46	$\text{DQ}_9$	67	$\text{PD}_1$
14	$\text{A}_2$	32	$\text{A}_9$	50	$\text{DQ}_{27}$	68	$\text{PD}_2$
15	$\text{A}_3$	33	NC	51	$\text{DQ}_{10}$	69	$\text{PD}_3$
16	$\text{A}_4$	34	$\overline{\text{RAS}}_2$	52	$\text{DQ}_{28}$	70	$\text{PD}_4$
17	$\text{A}_5$	35	$\text{DQ}_{26}$	53	$\text{DQ}_{11}$	71	NC
18	$\text{A}_6$	36	$\text{DQ}_8$	54	$\text{DQ}_{29}$	72	$\text{Vss}$

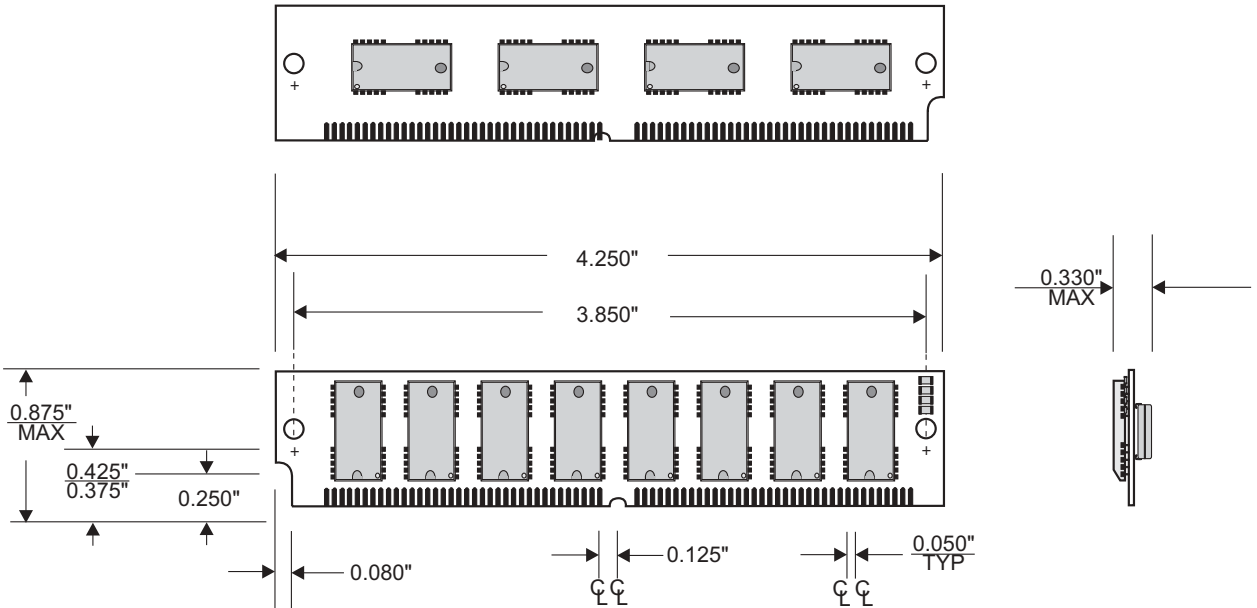
#### Presence Detect

	-60	-70	-80
$\text{PD}_1$	$\text{Vss}$	$\text{Vss}$	$\text{Vss}$
$\text{PD}_2$	$\text{Vss}$	$\text{Vss}$	$\text{Vss}$
$\text{PD}_3$	NC	$\text{Vss}$	NC
$\text{PD}_4$	NC	NC	$\text{Vss}$

# 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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