



# AK58256AG / AK58256AS

## 262,144 x 8 bit CMOS

### Dynamic Random Access Memory

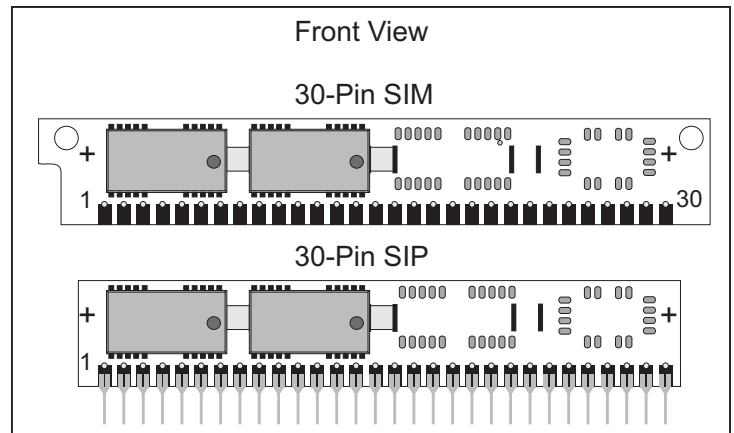
#### DESCRIPTION

The Accutek AK58256AG/AS high density memory module is a random access memory organized in 256K x 8 bit words. The assembly consists of two 256K x 4 DRAMs in surface mount packages mounted to the front side of a printed circuit board. The module can be configured as a leadless 30 pad SIM or a leaded 30 pin SIP. This packaging approach provides a better than 6 to 1 density increase over standard DIP packaging.

The operation of the AK58256 is identical to two 256K x 4 DRAMs. The data input/output is brought out separately for each 256K x 4 device, with common  $\overline{\text{RAS}}$ ,  $\overline{\text{CAS}}$  and  $\overline{\text{WE}}$  control. The  $\overline{\text{OE}}$  pins are tied to  $V_{\text{ss}}$  which dictates the use of early-write cycles to prevent contention of D and Q. Since the Write-Enable ( $\overline{\text{WE}}$ ) signal must always go low before  $\overline{\text{CAS}}$  in a write cycle, Read-Write and Read-Modify-Write operation is not possible.

#### FEATURES

- 262,144 x 8 bit organization
- Optional 30 Pad leadless SIM (Single In-Line Module) or 30 Pin leaded SIP (Single In-Line Package)
- JEDEC standard pinout
- Common  $\overline{\text{CAS}}$ ,  $\overline{\text{RAS}}$  and  $\overline{\text{WE}}$  control for eight DQ lines
- Separate  $\overline{\text{CAS}}$  control for one separate pair of D and Q lines
- 1024 refresh cycles/16ms,  $A_0$  to  $A_8$
- Power:
  - .99 Watt Max Active (60 nS)
  - .88 Watt Max Active (70 nS)
  - .77 Watt Max Active (80 nS)
  - .65 Watt Max Active (100 nS)
  - 11 mWatt standby (max)
- Operating free air temperature:  $0^{\circ}$  to  $70^{\circ}\text{C}$
- Upward compatible with AK581024, AK584096 and AK5816384
- Functionally and Pin compatible with AK48256
- Available with access times of 60 to 100 nS



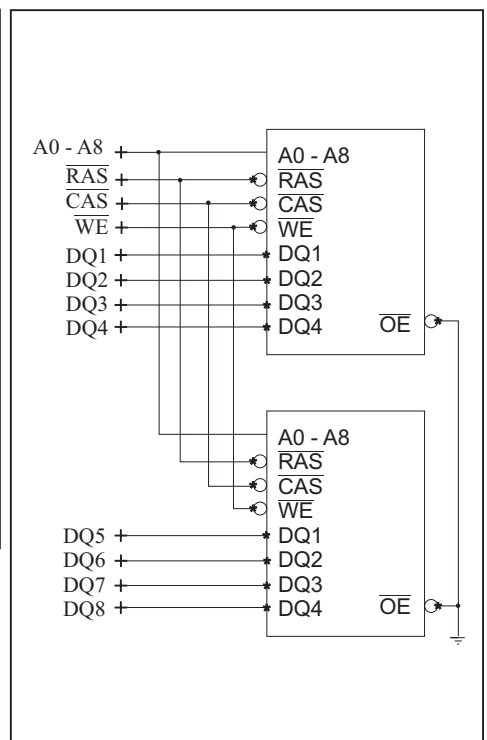
#### PIN NOMENCLATURE

DQ <sub>1</sub> - DQ <sub>8</sub>	Data In / Data Out
A <sub>0</sub> - A <sub>8</sub>	Address Inputs
$\overline{\text{CAS}}$	Column Address Strobe
$\overline{\text{RAS}}$	Row Address Strobe
$\overline{\text{WE}}$	Write Enable
V <sub>cc</sub>	5v Supply
V <sub>ss</sub>	Ground
NC	No Connect

#### PIN ASSIGNMENT

PIN #	SYMBOL	PIN #	SYMBOL
1	V <sub>cc</sub>	16	DQ5
2	$\overline{\text{CAS}}$	17	A <sub>8</sub>
3	DQ1	18	NC
4	A <sub>0</sub>	19	NC
5	A <sub>1</sub>	20	DQ6
6	DQ2	21	$\overline{\text{WE}}$
7	A <sub>2</sub>	22	V <sub>ss</sub>
8	A <sub>3</sub>	23	DQ7
9	V <sub>ss</sub>	24	NC
10	DQ3	25	DQ8
11	A <sub>4</sub>	26	NC
12	A <sub>5</sub>	27	$\overline{\text{RAS}}$
13	DQ4	28	NC
14	A <sub>6</sub>	29	NC
15	A <sub>7</sub>	30	V <sub>cc</sub>

#### FUNCTIONAL DIAGRAM



#### MODULE OPTIONS

Leadless SIM: AK58256AS
Leaded SIP: AK58256AG

## ORDERING 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

### 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		
10 = 100 nS	20 = 20 nS		
12 = 120 nS	70 = 70 nS		
15 = 150 nS	85 = 85 nS		

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.

## EXAMPLES:

### AK58256ASP-60

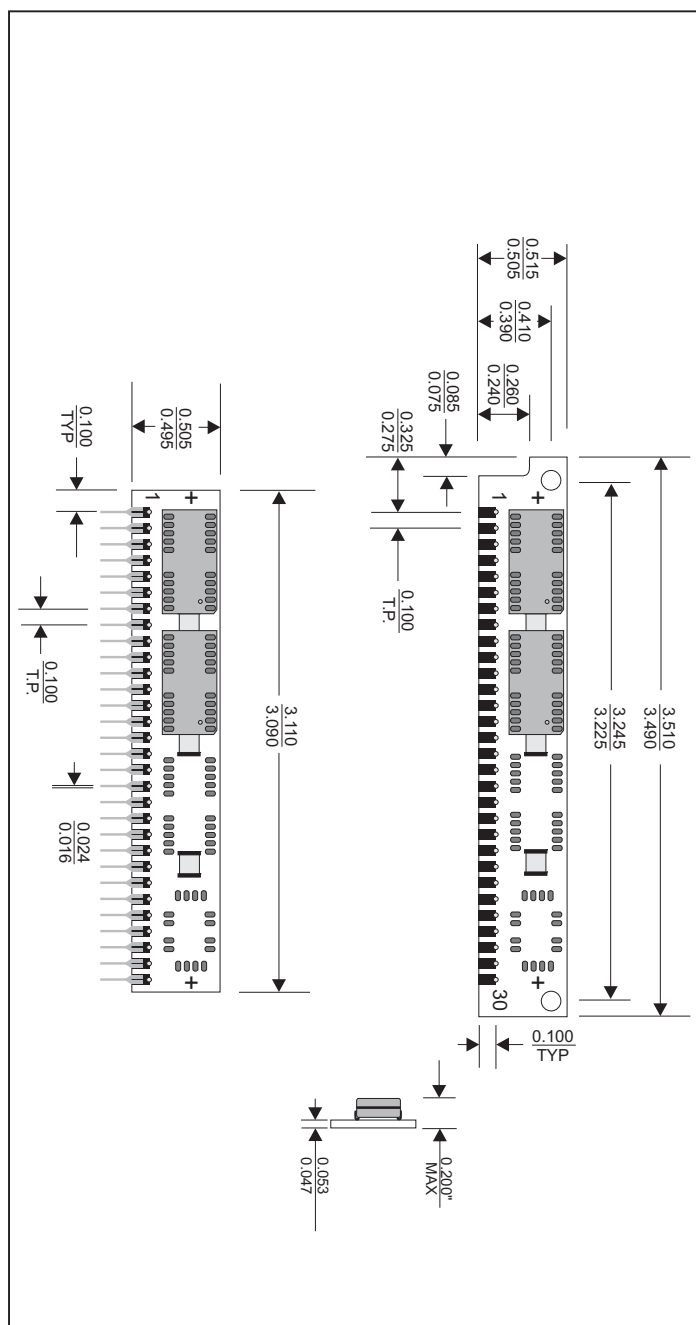
256K x 8, Dynamic RAM, Leadless SIM, Page Mode, Commercial, 60 nSEC Access Time

### AK58256AGK-70

256K x 8, Dynamic RAM, Leaded SIP, Static Column Mode Commercial, 70 nSEC AccessTime

## MECHANICAL DIMENSIONS

Inches



Accuthek reserves the right to make changes in specifications at any time and without notice. Accuthek 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.