# Accutek Microcircuit Corporation

## 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 $\overline{RAS}$, $\overline{CAS}$ and $\overline{WE}$ control. The $\overline{OE}$ pins are tied to Vss which dictates the use of early-write cycles to prevent contention of D and Q. Since the Write-Enable ($\overline{WE}$) signal must always go low before $\overline{CAS}$ in a write cycle, Read-Write and Read-Modify-Write operation is not possible.

Front View

30-Pin SIM



30-Pin SIP



## 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 $\overline{CAS}$, $\overline{RAS}$ and $\overline{WE}$ control for eight DQ lines
- Separate $\overline{CAS}$ 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: $0^0$ to $70^0$C

- Upward compatible with AK581024, AK584096 and AK5816384

- Functionally and Pin compatible with AK48256

- Available with access times of 60 to 100 nS
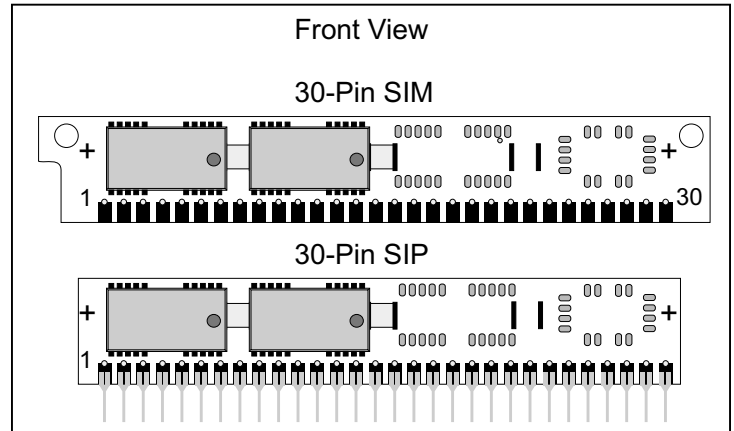
## PIN NOMENCLATURE

| | |
|---|---|
| $DQ_1$ - $DQ_8$ | Data In / Data Out |
| $A_0$ - $A_8$ | Address Inputs |
| $\overline{CAS}$ | Column Address Strobe |
| $\overline{RAS}$ | Row Address Strobe |
| $\overline{WE}$ | Write Enable |
| Vcc | 5v Supply |
| Vss | Ground |
| NC | No Connect |

## MODULE OPTIONS

| |
|---|
| Leadless SIM: AK58256AS |
| Leaded SIP: AK58256AG |

## PIN ASSIGNMENT

| PIN # | SYMBOL | PIN # | SYMBOL |
|---|---|---|---|
| 1 | Vcc | 16 | DQ5 |
| 2 | $\overline{CAS}$ | 17 | A8 |
| 3 | DQ1 | 18 | NC |
| 4 | A0 | 19 | NC |
| 5 | A1 | 20 | DQ6 |
| 6 | DQ2 | 21 | $\overline{WE}$ |
| 7 | A2 | 22 | Vss |
| 8 | A3 | 23 | DQ7 |
| 9 | Vss | 24 | NC |
| 10 | DQ3 | 25 | DQ8 |
| 11 | A4 | 26 | NC |
| 12 | A5 | 27 | $\overline{RAS}$ |
| 13 | DQ4 | 28 | NC |
| 14 | A6 | 29 | NC |
| 15 | A7 | 30 | Vcc |

## FUNCTIONAL DIAGRAM
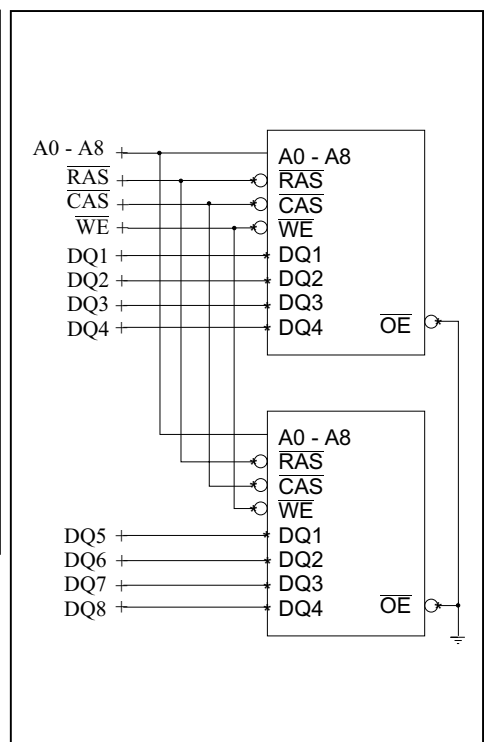
## ORDERING INFORMATION

## 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 = 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 $0^0$C to +$70^0$C**
    **M =  Military Equivalent Screened**
         **(-$55^0$C to +$125^0$C)**
    **I  =  Industrial Temperature Tested**
         **(-$45^0$C to +$85^0$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 Accutek if other information is required.

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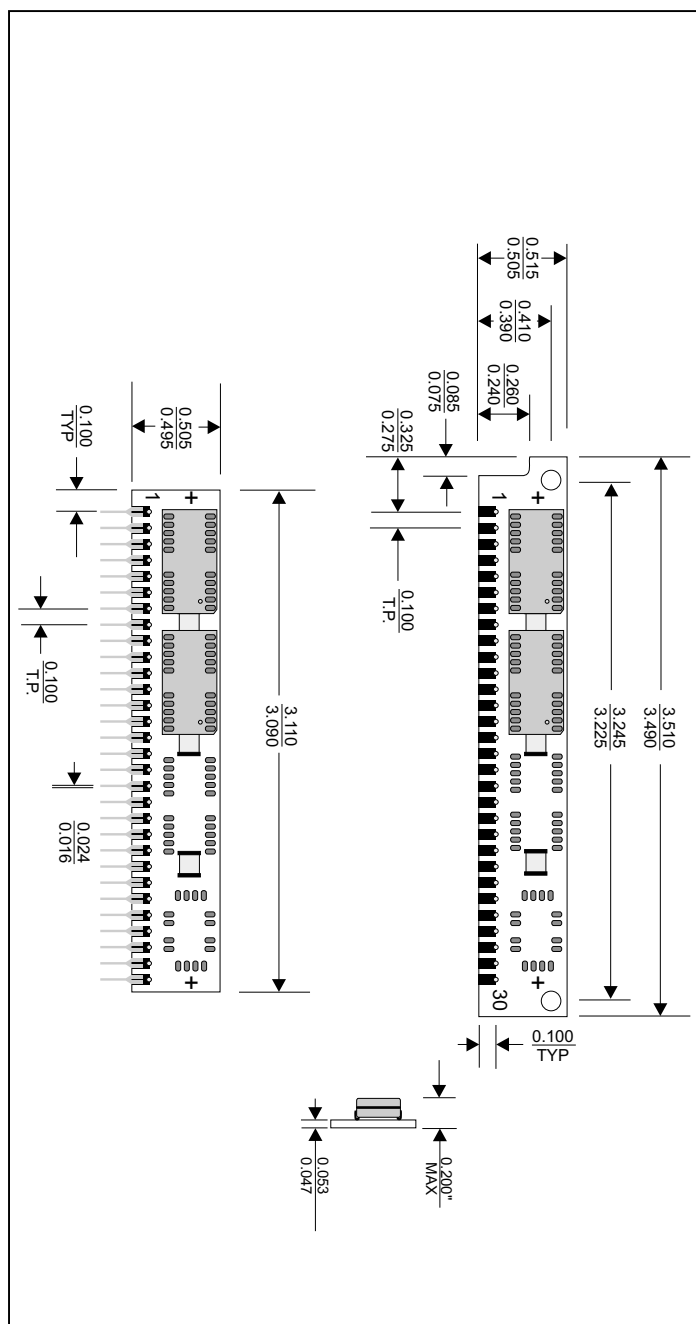Internet:  www.accutekmicro.com

## EXAMPLES:

**AK58256ASP-60**

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

**AK58256AGK-70**
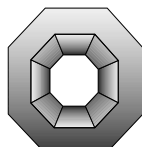
256K x 8, Dynamic RAM, Leaded SIP, Static Column Mode Commercial, 70 nSEC AccessTime

## MECHANICAL DIMENSIONS

Inches