# Accutek Microcircuit Corporation

## AK581024AG / AK581024AS
## 1,048,576 x 8 bit CMOS
## Dynamic Random Access Memory

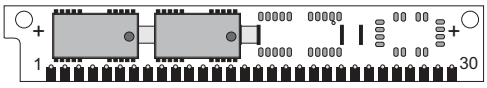
## DESCRIPTION

The Accutek AK581024 high density memory modules is a random access memory organized in 1 Meg x 8 bit words. The assembly consists of two 1 Meg x 4 DRAMs in surface mount packages mounted to a printed circuit board. The module can be configured as a leadless 30 pad SIMM or a leaded 30 pin SIP. This packaging approach provides a better than 6 to 1 density increase over standard DIP packaging.

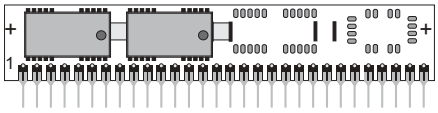
The operation of the AK581024 is identical to two 1 Meg x 4 DRAMs. The data input/output is brought out separately for each 1 Meg x 4 device, with common $\overline{RAS}$, $\overline{CAS}$ and $\overline{WE}$ control. The $\overline{OE}$ pins are tied to Vss which dictates the use of early-write cycles 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

- 1 Meg x 8 bit organization
- Optional 30 Pad SIM (Single In-Line Module) or 30 Pin leaded SIP (Single In-Line Package)
- JEDEC approved 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 $A_9$
- 1.10 Watt active and 23.5 mWatt standby (max)
- Operating free air temperature: $0^0$ to $70^0$C
- Upward compatible with AK584096 and AK5816384
- Functionally and Pin compatible with AK481024
- Available with access times of 60 to 100 nS

## PIN NOMENCLATURE

| | |
|---|---|
| $DQ_1$ - $DQ_8$ | Data In/Data Out |
| $A_0$ - $A_9$ | Address Inputs |
| $\overline{CAS}$ | Column Address Strobe |
| $\overline{RAS}$ | Row Address Strobe |
| $\overline{WE}$ | Write Enable |
| Vcc | 5v Supply |
| Vss | Ground |
| NC | No Connect |

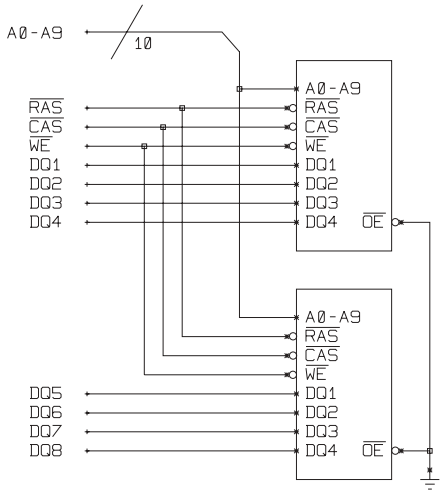
## MODULE OPTIONS

| |
|---|
| Leadless SIM: AK581024ASP |
| Leaded SIP: AK581024AGP |
| |

## PIN ASSIGNMENT

| PIN # | SYMBOL | PIN # | SYMBOL |
|---|---|---|---|
| 1 | Vcc | 16 | DQ5 |
| 2 | CAS | 17 | A8 |
| 3 | DQ1 | 18 | A9 |
| 4 | A0 | 19 | NC |
| 5 | A1 | 20 | DQ6 |
| 6 | DQ2 | 21 | WE |
| 7 | A2 | 22 | Vss |
| 8 | A3 | 23 | DQ7 |
| 9 | Vss | 24 | NC |
| 10 | DQ3 | 25 | DQ8 |
| 11 | A4 | 26 | NC |
| 12 | A5 | 27 | 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 | 12 | = 12 nS |
| 70 | = 70 nS | 15 | = 15 nS |
| 80 | = 80 nS | 20 | = 20 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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## EXAMPLES:

**AK581024ASP-60**

1 Meg x 8, Dynamic RAM, Leadless SIM, Page Mode, Commercial, 60 nSEC Access Time

**AK581024AGP-70**

1 Meg x 8, Dynamic RAM, Leaded SIP, Page Mode Commercial, 70 nSEC AccessTime

## MECHANICAL DIMENSIONS

Inches