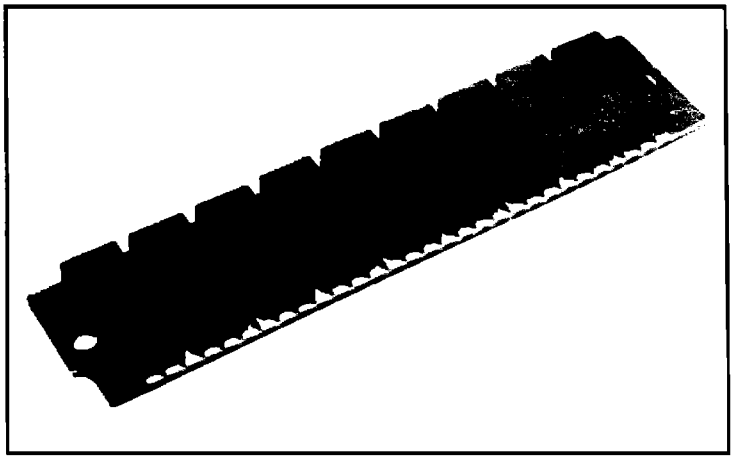
ACCUTEK MICROCIRCUIT CORPORATION

AK491024S/AK491024G
1,048,576 x 9 bit CMOS
Dynamic Random Access Memory

DESCRIPTION

The Accutek AK491024 high density memory module is a random access memory organized in 1 Meg x 9 bit words. The assembly consists of nine 1 Meg x 1 DRAMs in plastic leaded chip carriers (SOJ) mounted to a printed wiring board. The module can be configured as a leadless 30 pad SIMM or a leaded 30 pin SIP. This packaging approach provides a 6 to 1 density increase over standard DIP packaging.



The operation of the AK491024 is identical to nine 1 Meg dynamic RAMs. For the lower eight bits, the data input is tied to the data output and brought out separately for each device, with common $\overline{RAS}$ and $\overline{CAS}$ control. This common I/O feature 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. For the ninth bit, the data input (D_9) and data output (Q_9) pins are brought out separately and controlled by a separate $\overline{CAS}_9$ for that bit. Bit nine is generally used for parity.

FEATURES

- 1,048,576 x 9 bit organization
- Optional 30 Pad SIMM (Single In-line Memory Module) or 30 Pin leaded SIP (Single In-line Package)
- JEDEC approved pinout
- Common $\overline{CAS}$ and common $\overline{RAS}$ control for eight common D and Q lines
- Separate $\overline{CAS}$ control for one separate pair of D and Q lines
- $\overline{CAS}$-before-$\overline{RAS}$ refresh
- Power 3.465 Watt Max Active (80 nS)
  2.97 Watt Max Active (100 nS)
  2.475 Watt Max Active (120 nS)
  49.5 mW Max Standby
- Operating free air temperature 0°C to 70°C
- Upward compatible with AK494096
- Downward compatible with AK49256

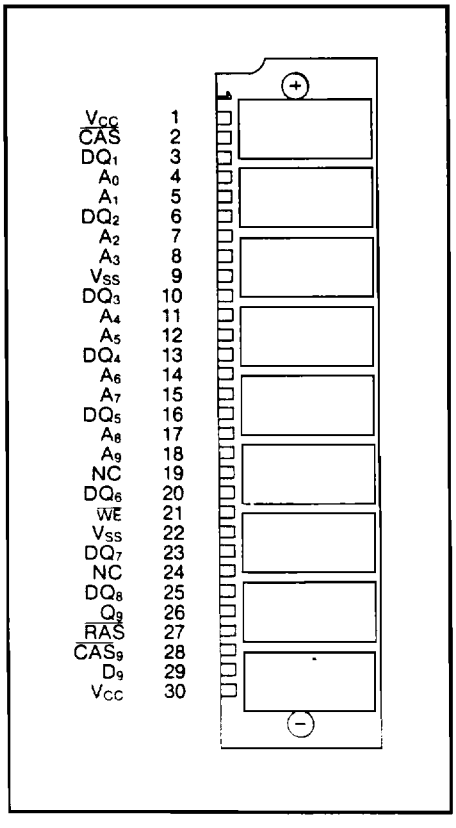
PIN NOMENCLATURE

DQ_1 - DQ_8	Data In/Data Out
D_9	Data In 9
Q_9	Data Out 9
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 Connection

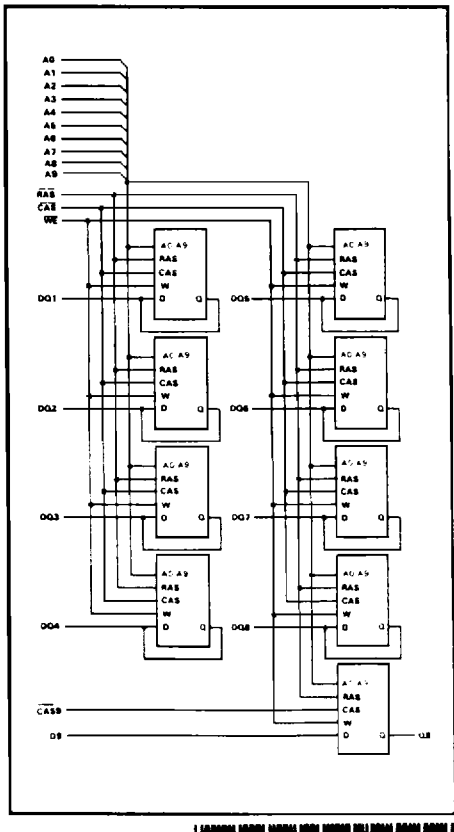
MODULE OPTIONS

Leadless SIMM: AK491024S Single Inline Memory Module
Leaded SIP: AK491024G Single Inline Package

PIN ASSIGNMENT



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
- 6 = Static RAM

3 - Organization/Word Width
- 1 = by 1
- 4 = by 4
- 8 = by 8
- 9 = by 9

4 - Size/Bits Depth
- 256 = 256K
- 1024 = 1MEG
- 4096 = 4MEG

5 - Package Type
- G = Single In-Line Package (SIP) - leaded
- S = Single In-Line Memory Module (SIMM)
- D = Dual In-Line Package (DIP)

6 - Special Designation
- P = Page Mode
- N = Nibble Mode
- K = Static Column Mode
- E = Serial Access Mode

7 - Separator
- - = Commercial (0° to +70°C)
- M = Military Equivalent Screened (-55° to +125°C)
- I = Industrial Temperature Tested (-40° to +85°C)
- X = Burned-In

8 - Speed (first two significant digits)
- 60 = 60ns
- 70 = 70ns
- 80 = 80ns
- 10 = 100ns
- 12 = 120ns
- etc.

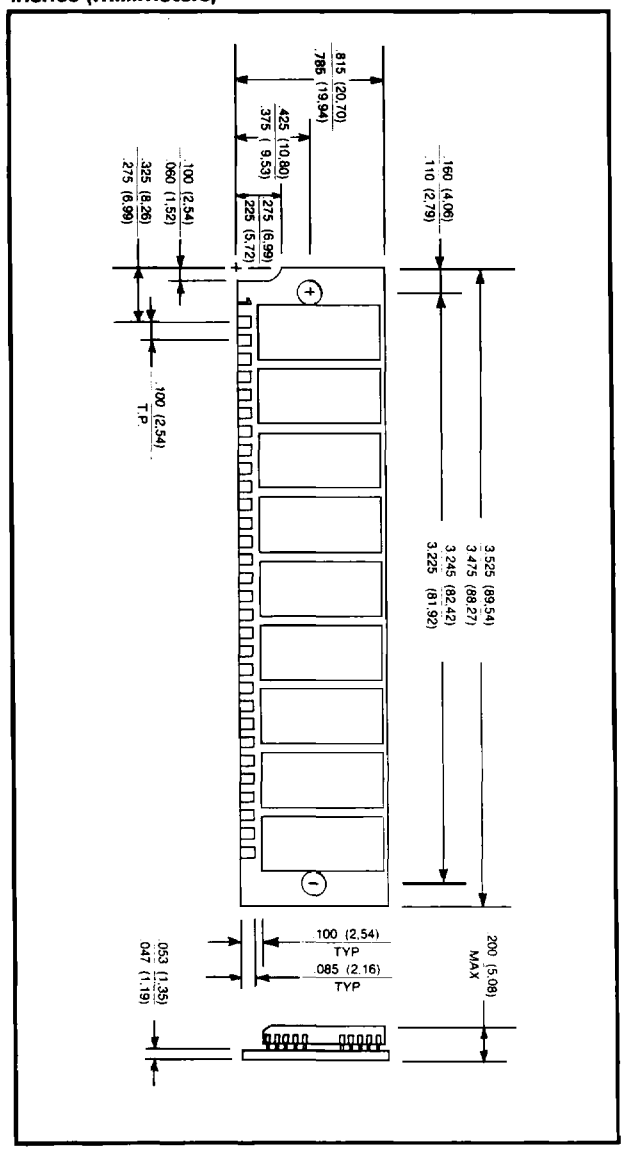
The numbers and coding combinations on this page do not include all variations available, but are shown as examples of most widely used variations. Contact Accutek if other information is required.

EXAMPLES:

AK491024SP-12
1 Meg x 9 Dynamic RAM, SIMM, Page Mode, Commercial, 120nS Access Time

AK481024GK-10
1 Meg x 8 Dynamic RAM, leaded SIP, Static Column Mode Commercial, 100nS Access Time

MECHANICAL DIMENSIONS
inches (millimeters)



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