ACCUTEK MICROCIRCUIT CORPORATION

AK632512W/AK632512Z
512K x 32 SRAM MODULE

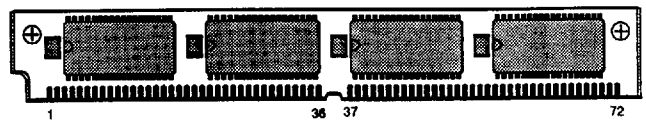
DESCRIPTION

The Accutek AK632512 SRAM Module consists of fast high performance SRAMs mounted on a low height, 72 pin SIM or ZIP Board. The module utilizes four 36 pin 512K x 8 SRAMs in 400 mil SOJ packages and four decoupling capacitors mounted on the front side of a printed circuit board.

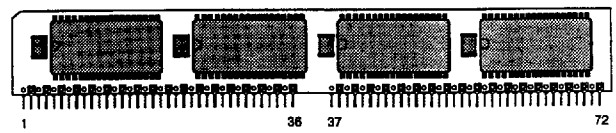
The SRAMs used have common I/O functions and single output enable functions. Also, four separate chip select ($\overline{CE}$) connections are used to independently enable the four bytes. The modules can be supplied in a variety of access time values from 15 nSEC to 35 nSEC in CMOS or BiCMOS technology.

The Accutek module is designed to have a maximum seated height of 0.620 inch SIM or 0.540 inch ZIP to provide for the lowest height off the board. Each conforms to JEDEC-standard sizes and pin-out configurations. Using four pins for module memory density identification, PD_0, PD_1, PD_2 and PD_3 minimizes interchangeability and design considerations when changing from one module size to the other in customer applications.

Front View
72-Pin SIM



72-Pin ZIP



FEATURES

- 524,288 x 32 bit organization
- JEDEC Standard 72 pin SIM or ZIP format
- Common I/O, single $\overline{OE}$ and $\overline{WE}$ functions with four separate chip selects ($\overline{CE}$)
- Fast access times from 15 nSEC
- Low height, 0.620 inch SIM or 0.540 inch ZIP maximum
- Power
  - 720mA Max Active (20 nSEC)
  - 760mA Max Active (15 nSEC)
  - 800mA Max Active (12 nSEC)
  - 200mA Max Standby
- Presence Detect, PD0, PD1, PD2 and PD3 for identifying module density
- Downward compatible with 256K x 32 (AK632256), 128K x 32 (AK632128) and 64K x 32 (AK63264) 64 pin SIM or ZIP designs
- Upward compatible with 1 MEG x 32 (AK6321024)
- TTL-compatible inputs and outputs
- Single +5 Volt (±10%) power supply
- Operating free air temperature 0^0 to 70^0C

ELECTRICAL SPECIFICATIONS

Timing diagrams and basic electrical characteristics are those of the standard 512K x 8 SRAMs used to construct these modules. Accutek's module design allows the flexibility of selecting industry-compatible 512K x 8 SRAMs from several SRAM manufacturers.

PIN NOMENCLATURE

A_0 - A_{18}	Address Inputs
$\overline{CE}_1$ - $\overline{CE}_4$	Chip Enable
DQ_1 - DQ_{32}	Data In/Data Out
$\overline{OE}$	Output Enable
PD_0 - PD_3	Presence Detect
Vcc	5v Supply
Vss	Ground
$\overline{WE}$	Write Enable

MODULE OPTIONS

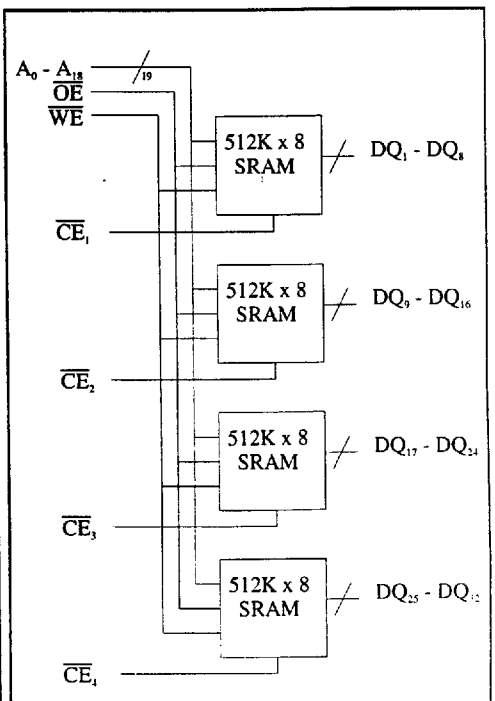
Leadless SIM: AK632512W
Leaded SIP: AK632512G
Leaded ZIP: AK632512Z

PIN ASSIGNMENT

PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL
1	NC	19	A_1	37	$\overline{CE}_4$	55	A_5
2	NC	20	A_8	38	$\overline{CE}_3$	56	A_{12}
3	PD_2	21	A_2	39	A_{17}	57	Vcc
4	PD_3	22	A_9	40	A_{16}	58	A_{13}
5	Vss	23	DQ_{13}	41	$\overline{OE}$	59	A_6
6	PD_0	24	DQ_5	42	Vss	60	DQ_{21}
7	PD_1	25	DQ_{14}	43	DQ_{25}	61	DQ_{29}
8	DQ_1	26	DQ_6	44	DQ_{17}	62	DQ_{22}
9	DQ_9	27	DQ_{15}	45	DQ_{26}	63	DQ_{30}
10	DQ_2	28	DQ_7	46	DQ_{18}	64	DQ_{23}
11	DQ_{10}	29	DQ_{16}	47	DQ_{27}	65	DQ_{31}
12	DQ_3	30	DQ_8	48	DQ_{19}	66	DQ_{24}
13	DQ_{11}	31	Vss	49	DQ_{27}	67	DQ_{32}
14	DQ_4	32	$\overline{WE}$	50	DQ_{20}	68	Vss
15	DQ_{12}	33	A_{15}	51	A_3	69	A_{18}
16	Vcc	34	A_{14}	52	A_{10}	70	NC
17	A_0	35	$\overline{CE}_2$	53	A_4	71	NC
18	A_7	36	$\overline{CE}_1$	54	A_{11}	72	NC

PD1	OPEN	PD3	Vss
PD2	OPEN	PD4	OPEN

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 0^0C to +70^0C
M = Military Equivalent Screened (-55^0C to +125^0C)
I = Industrial Temperature Tested (-45^0C to +85^0C)
X = Burned In

8 Speed (first two significant digits)

DRAMS		SRAMS	
60	= 60 nS	12	=12 nS
70	= 70 nS	20	=20 nS
80	= 80 nS	25	=25 nS
10	= 100 nS	35	=35 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.

EXAMPLES:

AK632512W-15

512K x 32, 15 nSEC SRAM Module, SIM Configuration

AK632512Z-20

512K x 32, 20 nSEC SRAM Module, ZIP Configuration

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MECHANICAL DIMENSIONS

Inches