

**DESCRIPTION**

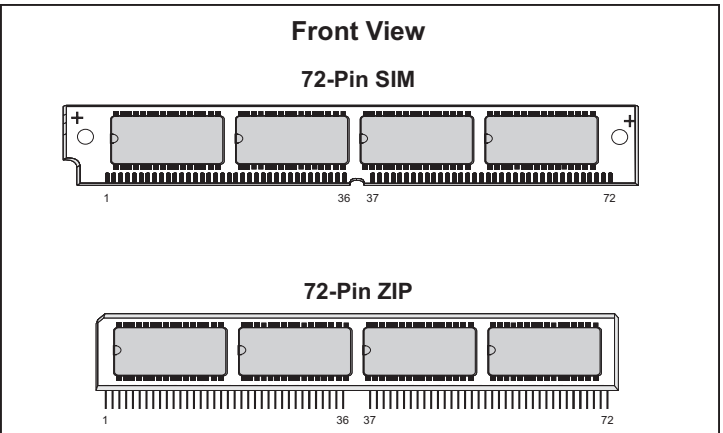
The Accutek AK631024 SRAM Module consists of fast high performance SRAMs mounted on a low profile, 72 pin SIM or ZIP PCB. The module utilizes four 32 pin 1 Meg x 4 SRAMs in 400 mil SOJ packages and four decoupling capacitor chips mounted on each side of a printed circuit board.

The SRAMs used have common I/O functions and single output enable functions. Also, four separate chip select (CE) connections are used to independently enable the four bytes. The modules can be supplied in a variety of access time values from 15nSEC to 30nSEC in CMOS or BiCMOS technology.

The Accutek module is designed to have a maximum seated height of 0.670 inch SIM or 0.550 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, PC<sub>0</sub>, PD<sub>1</sub>, PD<sub>2</sub> and PD<sub>3</sub> minimizes interchangeability and design considerations when changing from one module size to the other in customer applications.

**FEATURES**

- 1,048,576 x 32 SRAM module in high density configuration
- JEDEC Standardized 72 pin SIM format
- Common I/O, single OE functions with four separate chip selects (CE)
- Low height, 0.670 inch SIM or 0.550 inch ZIP maximum
- Presence Detect PD<sub>0</sub> through PC<sub>3</sub> for identifying module density
- TTL compatible inputs and outputs
- Single 5 volt power supply - AK6321024W, AK6321054Z
- Single 3.3 volt power supply - AK6321024W/3.3, AK6321024Z/3.3
- Fast access times range from 15 nSEC BiCMOS to 25 nSEC



- Power
  - 170mA Active (15nS)
  - 165mA Active (17nS)
  - 160mA Active (20nS)
  - 155mA Active (25nS)
  - 10mA Standby
- Downward pin compatible with 512K x 32 (AK632512) - 72 pin SIM or ZIP, and 256K x 32 (AK632256), 128K x 32 (AK632128), 64K x 32 (AK63264) and 32K x 32 (AK63232) - 64 pin SIM or ZIP designs
- Operating temperature range in free air, 0°C to 70°C

**ELECTRICAL SPECIFICATIONS**

Timing diagrams and basic electrical characteristics are those of the standard 1 Meg x 4 SRAMs used to construct these modules. Accutek's module design allows the flexibility of selecting industry-compatible 1 Meg x 4 SRAMs from several semiconductor manufacturers.

**PIN NOMENCLATURE**

A <sub>0</sub> - A <sub>19</sub>	Address Inputs
CE <sub>1</sub> - CE <sub>4</sub>	Chip Enable
DQ <sub>1</sub> - DQ <sub>32</sub>	Data In/Data Out
OE	Output Enable
PD <sub>0</sub> - PD <sub>3</sub>	Presence Detect
V <sub>cc</sub>	5v Supply
V <sub>ss</sub>	Ground
WE	Write Enable
NC	No Connect

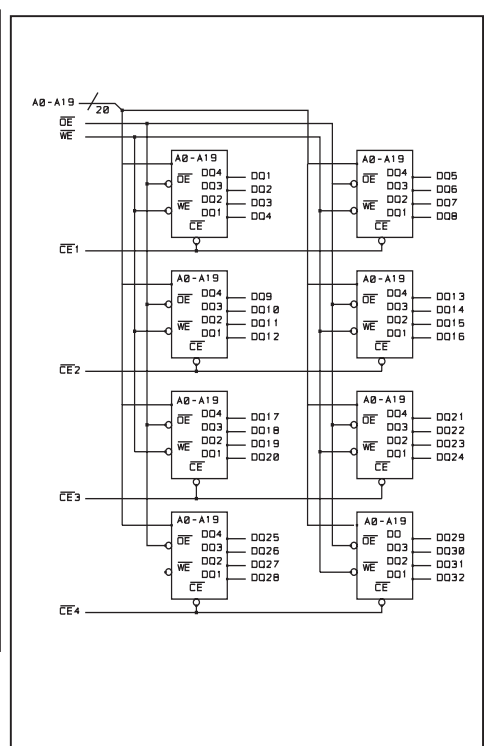
**PIN ASSIGNMENT**

PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL
1	NC	19	A1	37	CE4	55	A5
2	NC	20	A8	38	CE3	56	A12
3	PD2	21	A2	39	A17	57	V <sub>cc</sub>
4	PD3	22	A9	40	A16	58	A13
5	V <sub>ss</sub>	23	DQ13	41	OE	59	A6
6	PD0	24	DQ5	42	V <sub>ss</sub>	60	DQ21
7	PD1	25	DQ14	43	DQ25	61	DQ29
8	DQ1	26	DQ6	44	DQ17	62	DQ22
9	DQ9	27	DQ15	45	DQ26	63	DQ30
10	DQ2	28	DQ7	46	DQ18	64	DQ23
11	DQ10	29	DQ16	47	DQ27	65	DQ31
12	DQ3	30	DQ8	48	DQ19	66	DQ24
13	DQ11	31	V <sub>ss</sub>	49	DQ28	67	DQ32
14	DQ4	32	WE	50	DQ20	68	V <sub>ss</sub>
15	DQ12	33	A15	51	A3	69	A18
16	V <sub>cc</sub>	34	A14	52	A10	70	A19
17	A0	35	CE2	53	A4	71	NC
18	A7	36	CE1	54	A11	72	NC

PD<sub>0</sub> = V<sub>ss</sub>  
PD<sub>1</sub> = Open

PD<sub>2</sub> = V<sub>ss</sub>  
PD<sub>3</sub> = Open

**FUNCTIONAL DIAGRAM**



**MODULE OPTIONS**

Leadless SIM: AK6321024W
Leadless ZIP: AK6321024Z
Leaded SIP: AK6321024G

## 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	
50 = 50 nS	8 = 8 nS	
60 = 60 nS	10 = 10 nS	
70 = 70 nS	12 = 12 nS	
80 = 80 nS	15 = 15 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:

#### AK6321024W-15

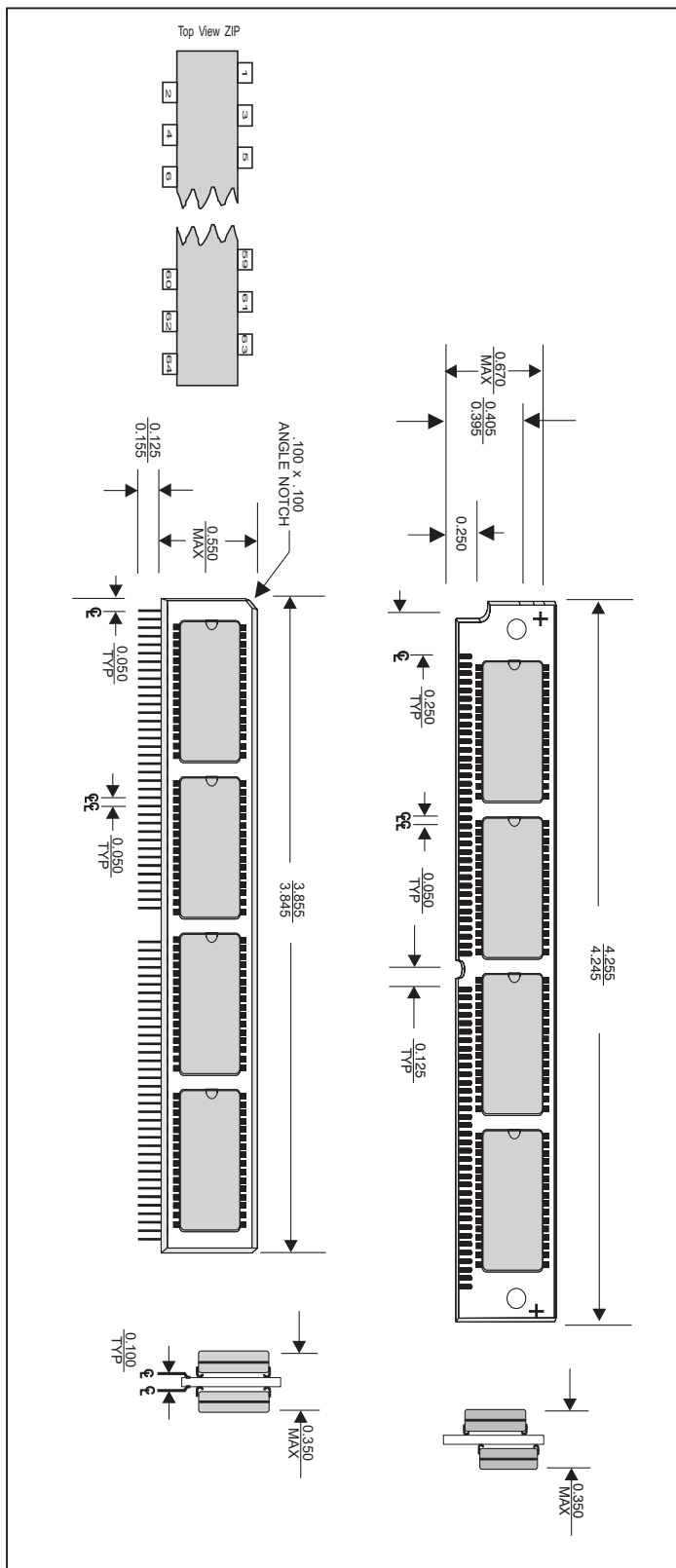
1 Meg x 32, 15 nSEC SRAM Module, SIM Configuration

#### AK6321024Z-17

1 Meg x 32, 17 nSEC SRAM Module, ZIP Configuration

## 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.