

# Accutek Microcircuit Corporation

## AK63232W 32,768 x 32 Bit CMOS/BiCMOS Static Random Access Memory

### DESCRIPTION

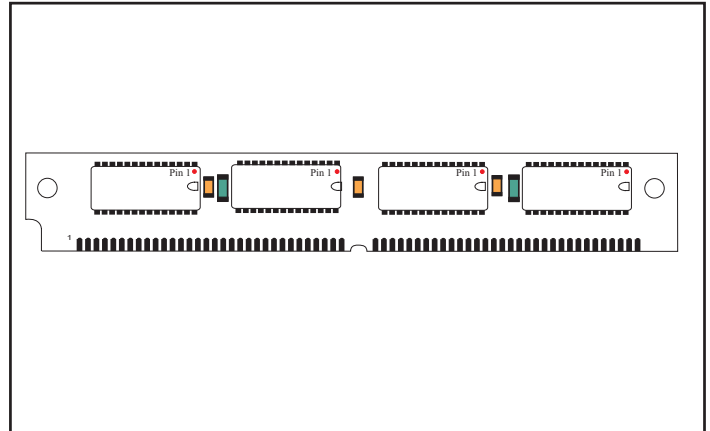
The Accutek AK63232W SRAM Module consists of fast high performance SRAMs mounted on a low profile, 64 pin SIM Board. The module utilizes four 28 pin 32K x 8 SRAMs in SOJ packages and four decoupling capacitor chips on one side of the circuit board.

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 12 nSEC to 45 nSEC in CMOS or BiCMOS technology.

The Accutek module is designed for the lowest height off the board, consistent with the availability of commonly available SRAM SOJ package configurations. Each conforms to JEDEC - standard sizes and pin-out configurations. This, along with use of two pins for module memory density identification, PD<sub>0</sub> and PD<sub>1</sub>, minimizes interchangeability and design considerations when changing from one module size to the other in customer applications.

### FEATURES

- 32,768 x 32 bit organization
- JEDEC Standardized 64 pin SIM format
- Common I/O, single OE functions with four separate chip selects (CE)
- Low height, 0.600 inch maximum, for mounting in straight-up or angled SIM sockets
- Upward compatible with 64k x 32, AK63264W, 256K x 32, AK6322W and 1 meg x 32, AK6321024W designs
- Presence Detect, PD<sub>0</sub> and PD<sub>1</sub> for identifying module density
- Fast Access Times range from 12 nSEC BiCMOS to 45 nSEC CMOS
- TTL compatible inputs and outputs
- Single 5 volt power supply - AK63232W
- Single 3.3 volt power supply - AK63232W/3.3
- Operating temperature range in free air, 0°C to 70°C



### PIN NOMENCLATURE

|                                    |                  |
|------------------------------------|------------------|
| A <sub>0</sub> - A <sub>14</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>1</sub>  | Presence Detect  |
| V <sub>cc</sub>                    | Power Supply     |
| V <sub>ss</sub>                    | Ground           |
| WE                                 | Write Enable     |

### MODULE OPTIONS

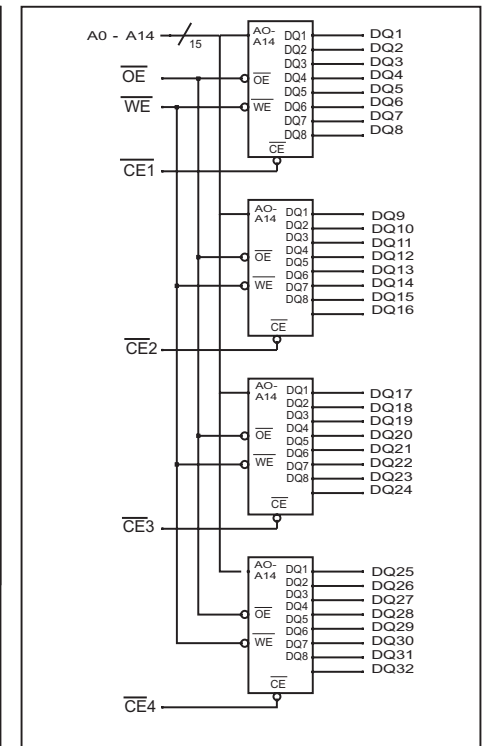
|                        |
|------------------------|
| Leadless SIM: AK63232W |
| Leaded SIP: AK63232G   |

### PIN ASSIGNMENT

| PIN # | SYMBOL           | PIN # | SYMBOL           | PIN # | SYMBOL           | PIN # | SYMBOL           |
|-------|------------------|-------|------------------|-------|------------------|-------|------------------|
| 1     | V <sub>ss</sub>  | 17    | A <sub>2</sub>   | 33    | CE <sub>4</sub>  | 49    | A <sub>4</sub>   |
| 2     | PD <sub>0</sub>  | 18    | A <sub>9</sub>   | 34    | CE <sub>3</sub>  | 50    | A <sub>11</sub>  |
| 3     | PD <sub>1</sub>  | 19    | DQ <sub>13</sub> | 35    | NC               | 51    | A <sub>5</sub>   |
| 4     | DQ <sub>1</sub>  | 20    | DQ <sub>5</sub>  | 36    | NC               | 52    | A <sub>12</sub>  |
| 5     | DQ <sub>9</sub>  | 21    | DQ <sub>14</sub> | 37    | OE               | 53    | V <sub>cc</sub>  |
| 6     | DQ <sub>2</sub>  | 22    | DQ <sub>6</sub>  | 38    | V <sub>ss</sub>  | 54    | A <sub>13</sub>  |
| 7     | DQ <sub>10</sub> | 23    | DQ <sub>15</sub> | 39    | DQ <sub>25</sub> | 55    | A <sub>6</sub>   |
| 8     | DQ <sub>3</sub>  | 24    | DQ <sub>7</sub>  | 40    | DQ <sub>17</sub> | 56    | DQ <sub>21</sub> |
| 9     | DQ <sub>11</sub> | 25    | DQ <sub>16</sub> | 41    | DQ <sub>26</sub> | 57    | DQ <sub>29</sub> |
| 10    | DQ <sub>4</sub>  | 26    | DQ <sub>8</sub>  | 42    | DQ <sub>18</sub> | 58    | DQ <sub>22</sub> |
| 11    | DQ <sub>12</sub> | 27    | V <sub>ss</sub>  | 43    | DQ <sub>27</sub> | 59    | DQ <sub>30</sub> |
| 12    | V <sub>cc</sub>  | 28    | WE               | 44    | DQ <sub>19</sub> | 60    | DQ <sub>23</sub> |
| 13    | A <sub>0</sub>   | 29    | NC               | 45    | DQ <sub>28</sub> | 61    | DQ <sub>31</sub> |
| 14    | A <sub>7</sub>   | 30    | A <sub>14</sub>  | 46    | DQ <sub>20</sub> | 62    | DQ <sub>24</sub> |
| 15    | A <sub>1</sub>   | 31    | CE <sub>2</sub>  | 47    | A <sub>3</sub>   | 63    | DQ <sub>32</sub> |
| 16    | A <sub>8</sub>   | 32    | CE <sub>1</sub>  | 48    | A <sub>10</sub>  | 64    | V <sub>ss</sub>  |

PD<sub>0</sub> = Open  
PD<sub>1</sub> = 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 <sup>0</sup> C to +70 <sup>0</sup> C                        |   |                |   |   |   |   |   |
|          | M = Military Equivalent Screened (-55 <sup>0</sup> C to +125 <sup>0</sup> C) |   |                |   |   |   |   |   |
|          | I = Industrial Temperature Tested (-45 <sup>0</sup> C to +85 <sup>0</sup> C) |   |                |   |   |   |   |   |
|          | X = Burned In                                                                |   |                |   |   |   |   |   |
| 8        | Speed (first two significant digits)                                         |   |                |   |   |   |   |   |
|          | DRAMS                                                                        |   | SRAMS          |   |   |   |   |   |
|          | 50 = 50 nS                                                                   |   | 8 = 8 nS       |   |   |   |   |   |
|          | 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.

### EXAMPLES:

**AK63232W-12**

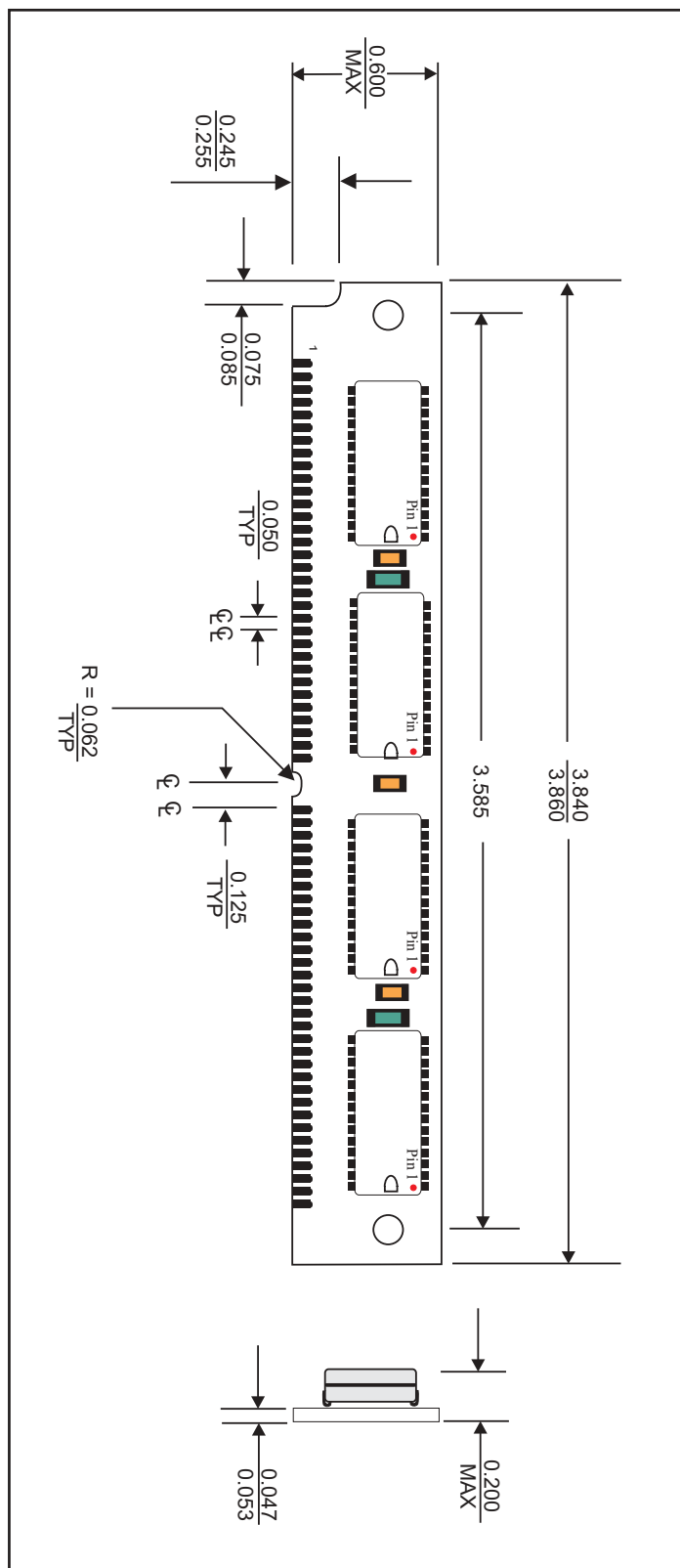
32K x 32, 12 nSEC SRAM SIM Module



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## MECHANICAL DIMENSIONS

Inches



Accutek reserves the right to make changes in specifications at any time and without notice. Accutek 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.