

# Accutek Microcircuit Corporation

## AK63264BZ 65,536 x 32 Bit CMOS/BiCMOS Static Random Access Memory

### DESCRIPTION

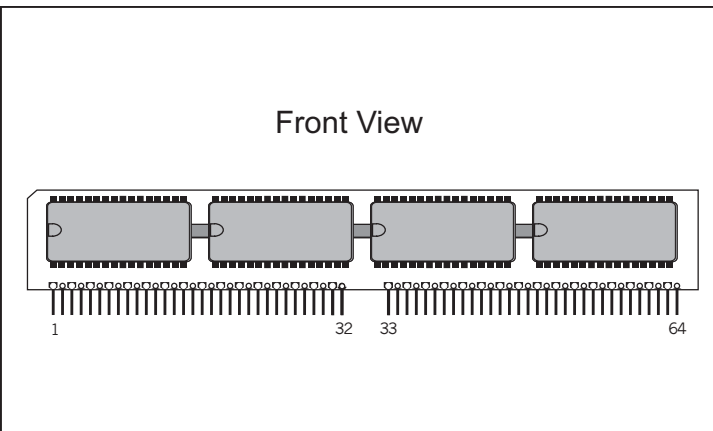
The Accutek AK63264BZ SRAM Module consists of fast high performance SRAMs mounted on a low height, 64 pin SIM or ZIP Board. The module utilizes four 32 pin 64K x 8 SRAMs in 300 mil SOJ packages and four decoupling capacitors mounted on the front side of a printed circuit board.

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 12nSEC to 35nSEC in CMOS or BiCMOS technology.

The Accutek module is designed to have a maximum seated height of 0.520 inch to provide for the lowest height off the board. Each conforms to JEDEC-standard sizes and pin-out configurations. Using two pins for module 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

- 65,536 x 32 bit organization
- JEDEC Standard 64 pin ZIP format
- Common I/O, single  $\overline{OE}$  functions with four separate chip selects ( $\overline{CE}$ )
- Low height 0.520 inch maximum
- Presence Detect, PD<sub>0</sub> and PD<sub>1</sub> for identifying module density
- Downward compatible with 32K x 32 (AK63232)
- Fast access times from 12nSEC



- Upward compatible with 128K x 32 (AK632128), 256K x 32 (AK632256), 512K x 32 (AK632512) and 1 Meg x 32 (AK6321024)
- TTL-compatible inputs and outputs
- Single 5 volt power supply - AK63264BZ
- Single 3.3 volt power supply - AK63264BZ/3.3
- Operating temperature range in free air, 0<sup>0</sup> to 70<sup>0</sup>C

### ELECTRICAL SPECIFICATIONS

Timing Diagrams and basic electrical characteristics are those of the standard 64K x 8 SRAMs used to construct these modules. Accutek's module design allows the flexibility of selecting industry-compatible 64K x 8 SRAMs from several semiconductor manufacturers.

### PIN NOMENCLATURE

|                                       |                  |
|---------------------------------------|------------------|
| A <sub>0</sub> - A <sub>15</sub>      | Address Inputs   |
| $\overline{CE}_1$ - $\overline{CE}_4$ | Chip Enable      |
| DQ <sub>1</sub> - DQ <sub>32</sub>    | Data In/Data Out |
| $\overline{OE}$                       | Output Enable    |
| PD <sub>0</sub> - PD <sub>1</sub>     | Presence Detect  |
| V <sub>cc</sub>                       | Power Supply     |
| V <sub>ss</sub>                       | Ground           |
| $\overline{WE}$                       | Write Enable     |
| NC                                    | No Connect       |

### MODULE OPTIONS

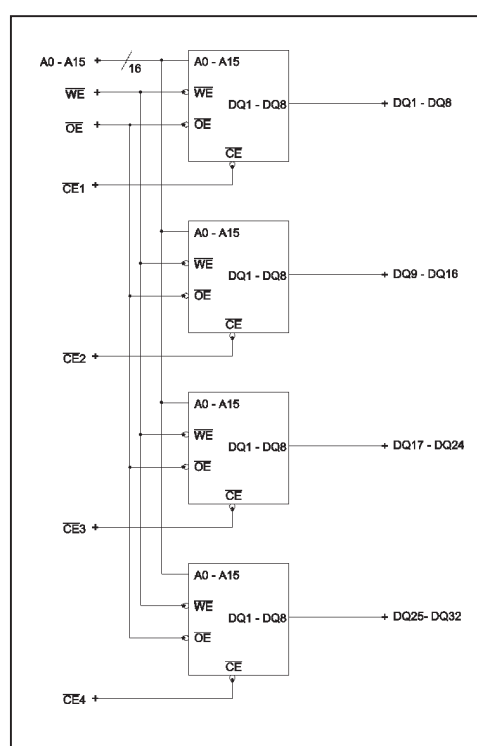
|                       |
|-----------------------|
| Leaded ZIP: AK63264BZ |
|                       |

### 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    | A <sub>15</sub>  | 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> = V<sub>ss</sub>

### FUNCTIONAL DIAGRAM



## ORDERING INFORMATION

### PART NUMBER CODING INTERPRETATION

| Position                                      | 1                                                  | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------------------------------------|----------------------------------------------------|---|---|---|---|---|---|---|
| <b>1 Product</b>                              |                                                    |   |   |   |   |   |   |   |
|                                               | <b>AK = Accuthek Memory</b>                        |   |   |   |   |   |   |   |
| <b>2 Type</b>                                 |                                                    |   |   |   |   |   |   |   |
|                                               | 4 = Dynamic RAM                                    |   |   |   |   |   |   |   |
|                                               | 5 = CMOS Dynamic RAM                               |   |   |   |   |   |   |   |
|                                               | 6 = Static RAM                                     |   |   |   |   |   |   |   |
| <b>3 Organization/Word Width</b>              |                                                    |   |   |   |   |   |   |   |
|                                               | 1 = by 1    16 = by 16                             |   |   |   |   |   |   |   |
|                                               | 4 = by 4    32 = by 32                             |   |   |   |   |   |   |   |
|                                               | 8 = by 8    36 = by 36                             |   |   |   |   |   |   |   |
|                                               | 9 = by 9                                           |   |   |   |   |   |   |   |
| <b>4 Size/Bits Depth</b>                      |                                                    |   |   |   |   |   |   |   |
|                                               | 64 = 64K    4096 = 4 MEG                           |   |   |   |   |   |   |   |
|                                               | 256 = 256K    8192 = 8 MEG                         |   |   |   |   |   |   |   |
|                                               | 1024 = 1 MEG    16384 = 16 MEG                     |   |   |   |   |   |   |   |
| <b>5 Package Type</b>                         |                                                    |   |   |   |   |   |   |   |
|                                               | 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)                  |   |   |   |   |   |   |   |
| <b>6 Special Designation</b>                  |                                                    |   |   |   |   |   |   |   |
|                                               | P = Page Mode                                      |   |   |   |   |   |   |   |
|                                               | N = Nibble Mode                                    |   |   |   |   |   |   |   |
|                                               | K = Static Column Mode                             |   |   |   |   |   |   |   |
|                                               | W = Write Per Bit Mode                             |   |   |   |   |   |   |   |
|                                               | V = Video Ram                                      |   |   |   |   |   |   |   |
| <b>7 Separator</b>                            |                                                    |   |   |   |   |   |   |   |
|                                               | - = 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                                      |   |   |   |   |   |   |   |
| <b>8 Speed (first two significant digits)</b> |                                                    |   |   |   |   |   |   |   |
|                                               | 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 show as examples of the most widely used variations. Contact Accuthek if other information is required.

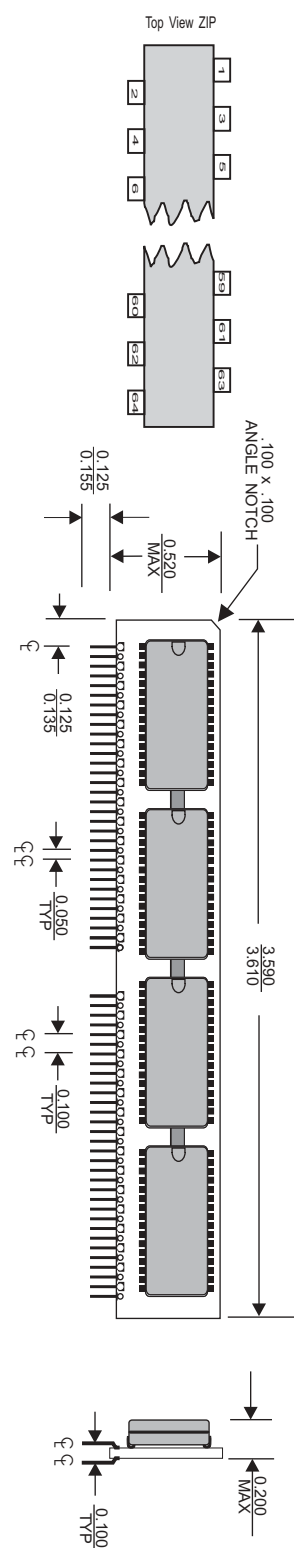
### EXAMPLES:

**AK63264BZ-12**

64K x 32, 12 nSEC, SRAM Module, ZIP Configuration, Low Height

## 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.



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