

# Accutek Microcircuit Corporation

## AK532256AW 262,144 Word by 32 Bit CMOS Dynamic Random Access Memory

### DESCRIPTION

The Accutek AK532256AW high density memory module is a CMOS dynamic RAM organized in 265K x 32 bit words. The module consists of two standard 256K x 16 bits DRAMs in plastic SOJ packages. The assembly has 2 DRAMs mounted on the front side of a printed circuit board in a 72 pad leadless SIM configuration.

This configuration allows socket-mounting of large quantities of memory in applications where high density and ease of inserting additional memory are important.

The operation of the AK532256AW is identical to eight 256K x 4 Drams. There are four CAS lines and two RAS lines. On each bank of 256K x 32, independent byte control is accomplished by four CAS lines. Each separate CAS line controls one byte of the 256K x 16 Dram.

### FEATURES

- 262,144 x 32 bit organization
- 72 pad Single In-Line Module
- $\overline{\text{CAS}}$ -before-RAS,  $\overline{\text{RAS}}$ -only or hidden refresh
- Operating free air temperature 0°C to 70°C
- Single 5 Volt Power Supply
- 1024 Refresh Cycles, 16 mSEC
- Available in Fast Page Mode
- Power: 2.090 Watt Max Active (50 nS)  
1.870 Watt Max Active (60 nS)  
1.760 Watt Max Active (70 nS)  
22 mW Max Standby

- Available in Fast Page Mode or EDO
- Upward compatible with AK532512W, AK5321024W, AK5322048W, AK5324096W and AK5328192W

### ADDITIONAL OPTIONS AVAILABLE

- 256K x 36 version, AK536256W
- 512K x 32 version, AK532512W
- 512K x 36 version, AK536512W

### PIN NOMENCLATURE

|                                                       |                       |
|-------------------------------------------------------|-----------------------|
| DQ <sub>0</sub> - DQ <sub>31</sub>                    | Data In/Data Out      |
| A <sub>0</sub> - A <sub>8</sub>                       | Address Inputs        |
| $\overline{\text{CAS}}_0$ - $\overline{\text{CAS}}_3$ | Column Address Strobe |
| $\overline{\text{RAS}}_0$ , $\overline{\text{RAS}}_2$ | Row Address Strobe    |
| $\overline{\text{WE}}$                                | Write Enable          |
| PD <sub>1</sub> - PD <sub>4</sub>                     | Presence Detect       |
| V <sub>cc</sub>                                       | 5v Supply             |
| V <sub>ss</sub>                                       | Ground                |
| NC                                                    | No Connect            |

### MODULE OPTIONS

|                          |
|--------------------------|
| Leadless SIM: AK532256AW |
| Leaded ZIP: AK532256AZ   |

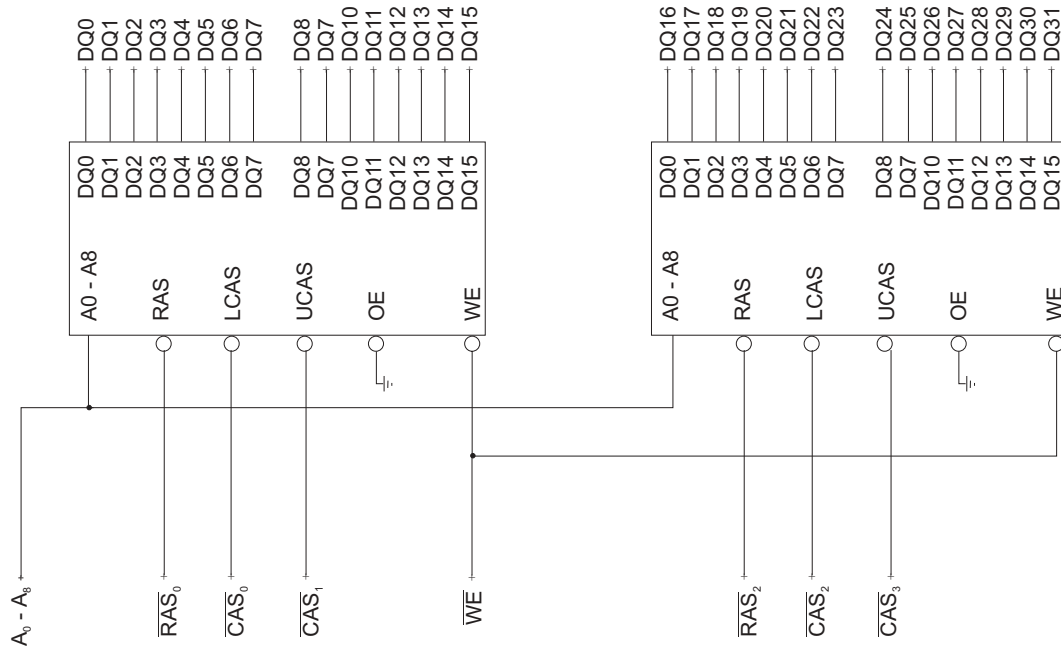
### PIN ASSIGNMENT

| PIN # | SYMBOL            | PIN # | SYMBOL                    | PIN # | SYMBOL                    | PIN # | SYMBOL           |
|-------|-------------------|-------|---------------------------|-------|---------------------------|-------|------------------|
| 1     | V <sub>ss</sub>   | 19    | NC                        | 37    | NC                        | 55    | DQ <sub>11</sub> |
| 2     | DQ <sub>0</sub>   | 20    | DQ <sub>4</sub>           | 38    | NC                        | 56    | DQ <sub>27</sub> |
| 3     | DQ <sub>16</sub>  | 21    | DQ <sub>20</sub>          | 39    | V <sub>ss</sub>           | 57    | DQ <sub>12</sub> |
| 4     | DQ <sub>1</sub>   | 22    | DQ <sub>5</sub>           | 40    | $\overline{\text{CAS}}_0$ | 58    | DQ <sub>28</sub> |
| 5     | DDQ <sub>17</sub> | 23    | DQ <sub>21</sub>          | 41    | $\overline{\text{CAS}}_2$ | 59    | V <sub>cc</sub>  |
| 6     | DQ <sub>2</sub>   | 24    | DQ <sub>6</sub>           | 42    | $\overline{\text{CAS}}_3$ | 60    | DQ <sub>29</sub> |
| 7     | DQ <sub>18</sub>  | 25    | DQ <sub>22</sub>          | 43    | $\overline{\text{CAS}}_1$ | 61    | DQ <sub>13</sub> |
| 8     | DQ <sub>3</sub>   | 26    | DQ <sub>7</sub>           | 44    | $\overline{\text{RAS}}_0$ | 62    | DQ <sub>30</sub> |
| 9     | DQ <sub>19</sub>  | 27    | DQ <sub>23</sub>          | 45    | NC                        | 63    | DQ <sub>14</sub> |
| 10    | V <sub>cc</sub>   | 28    | A <sub>7</sub>            | 46    | NC                        | 64    | DQ <sub>31</sub> |
| 11    | NC                | 29    | NC                        | 47    | $\overline{\text{WE}}$    | 65    | DQ <sub>15</sub> |
| 12    | A <sub>0</sub>    | 30    | V <sub>cc</sub>           | 48    | NC                        | 66    | NC               |
| 13    | A <sub>1</sub>    | 31    | A <sub>8</sub>            | 49    | DQ <sub>8</sub>           | 67    | PD <sub>1</sub>  |
| 14    | A <sub>2</sub>    | 32    | NC                        | 50    | DQ <sub>24</sub>          | 68    | PD <sub>2</sub>  |
| 15    | A <sub>3</sub>    | 33    | NC                        | 51    | DQ <sub>9</sub>           | 69    | PD <sub>3</sub>  |
| 16    | A <sub>4</sub>    | 34    | $\overline{\text{RAS}}_2$ | 52    | DQ <sub>25</sub>          | 70    | PD <sub>4</sub>  |
| 17    | A <sub>5</sub>    | 35    | NC                        | 53    | DQ <sub>10</sub>          | 71    | NC               |
| 18    | A <sub>6</sub>    | 36    | NC                        | 54    | DQ <sub>26</sub>          | 72    | V <sub>ss</sub>  |

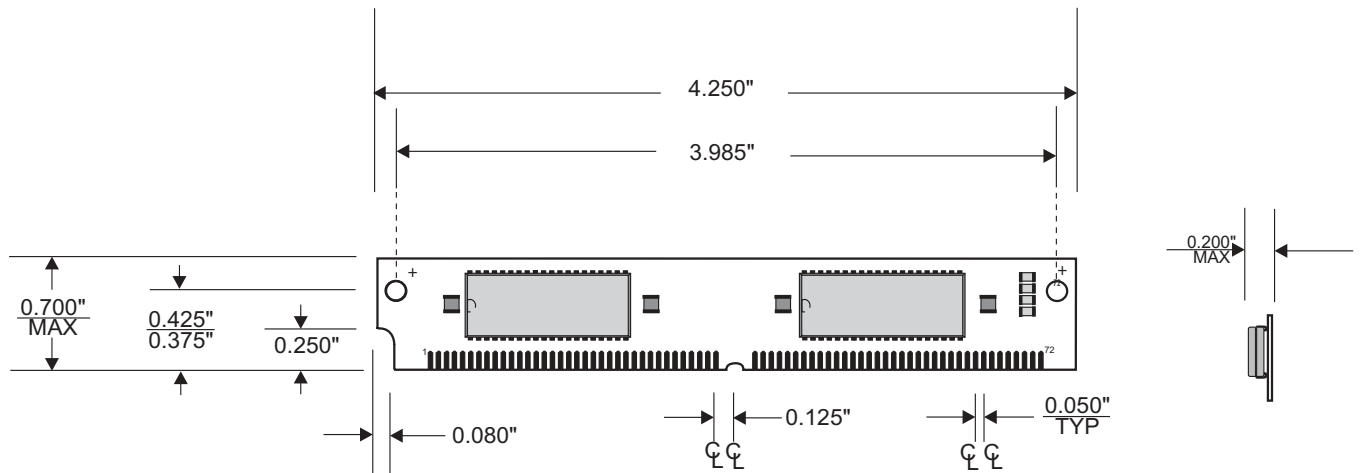
#### Presence Detect -

|                 | -60             | -70             | -80             |
|-----------------|-----------------|-----------------|-----------------|
| PD <sub>1</sub> | V <sub>ss</sub> | V <sub>ss</sub> | V <sub>ss</sub> |
| PD <sub>2</sub> | NC              | NC              | NC              |
| PD <sub>3</sub> | NC              | V <sub>ss</sub> | NC              |
| PD <sub>4</sub> | NC              | NC              | V <sub>ss</sub> |

## FUNCTIONAL DIAGRAM



## MECHANICAL DIMENSIONS



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