



12815 NE 124<sup>th</sup> St STE#D, Kirkland, WA-98034

### AS4C512M16D4A-62BCN vs AS4C512M16D4B-62BCN Comparison

| Parameter \ Part Number & result    | AS4C512M16D4A-62BCN                                              | AS4C512M16D4B-62BCN                                              | Comparison Result |
|-------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|-------------------|
| Product Description                 | DDR4 SDRAM                                                       | DDR4 SDRAM                                                       | Same              |
| Die                                 | Rev.A                                                            | Rev.B                                                            | Same              |
| Capacity                            | 8Gb (512M x 16)                                                  | 8Gb (512M x 16)                                                  | Same              |
| Memory Organization                 | 64Meg, x16bits, x8 banks                                         | 64Meg, x16bits, x8 banks                                         | Same              |
| Operating Power Supply              | V <sub>DD</sub> & V <sub>DDQ</sub> = 1.2V (+/- 60mV)             | V <sub>DD</sub> & V <sub>DDQ</sub> = 1.2V (+/- 60mV)             | Same              |
|                                     | V <sub>pp</sub> = 2.5V (-125mV,+250mV)                           | V <sub>pp</sub> = 2.5V (-125mV,+250mV)                           | Same              |
| Operating Temperature               | Commercial (0°C ≤ Tc ≤ +95°C)                                    | Commercial (0°C ≤ Tc ≤ +95°C)                                    | Same              |
| Max Clock Frequency                 | 1600 MHz                                                         | 1600 MHz                                                         | Same              |
| Min. Cycle Time                     | 0.625ns                                                          | 0.625ns                                                          | Same              |
| Max Data Rate                       | 3200 Mbps                                                        | 3200 Mbps                                                        | Same              |
| CAS Latency                         | 22                                                               | 22                                                               | Same              |
| tAA(ns)                             | 13.75                                                            | 13.75                                                            | Same              |
| tRCD (ns)                           | 13.75                                                            | 13.75                                                            | Same              |
| tRP (ns)                            | 13.75                                                            | 13.75                                                            | Same              |
| Number of Bank groups               | 2                                                                | 2                                                                | Same              |
| Bank Count per Group                | 4                                                                | 4                                                                | Same              |
| Row Addressing                      | 64K (A0..A15)                                                    | 64K (A0..A15)                                                    | Same              |
| Column Addressing                   | 1K (A0..9)                                                       | 1K (A0..9)                                                       | Same              |
| Page Size per bank                  | 1KB                                                              | 1KB                                                              | Same              |
| Temperature controlled Refresh time | 8192 Cycles at Tc range<br>64ms at 0C ~ 85C<br>32ms at 85C ~ 95C | 8192 Cycles at Tc range<br>64ms at 0C ~ 85C<br>32ms at 85C ~ 95C | Same              |
| Low Power Auto Self Refresh support | Yes                                                              | Yes                                                              |                   |
| I/O Capacitance                     | CIO = 1pF Max                                                    | CIO = 1pF Max                                                    | Same              |
| Pin to Pin Compatible               | Pin to Pin Compatible                                            |                                                                  |                   |
| AC/DC Characteristics               | Same                                                             |                                                                  | Meet JEDEC        |



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| IDD Specification                             |                                       |                                                       |                   |
|-----------------------------------------------|---------------------------------------|-------------------------------------------------------|-------------------|
| Parameter                                     | AS4C512M16D4A-62BCN                   | AS4C512M16D4B-62BCN                                   | Comparison Result |
| IDD Spec conditions                           | -40C to 95C                           | -40C to 85C                                           |                   |
| I <sub>DD0</sub> (mA) , I <sub>pp0</sub> (mA) | 104 , 7                               | 59, 5                                                 | Rev.B better      |
| I <sub>DD1</sub> (mA)                         | 131                                   | 69                                                    | Rev.B better      |
| I <sub>DD2N</sub> (mA)                        | 67                                    | 38                                                    | Rev.B better      |
| I <sub>DD2NT</sub> (mA)                       | 85                                    | 46                                                    | Rev.B better      |
| I <sub>DD2P</sub> (mA)                        | 29                                    | 30                                                    | Comparable        |
| I <sub>DD2Q</sub> (mA)                        | 39                                    | 34                                                    | Rev.B better      |
| I <sub>DD3N</sub> (mA)                        | 115                                   | 44                                                    | Rev.B better      |
| I <sub>DD3P</sub> (mA)                        | 71                                    | 34                                                    | Rev.B better      |
| I <sub>DD4R</sub> (mA)                        | 295                                   | 176                                                   | Rev.B better      |
| I <sub>DD4W/A/B</sub> (mA)                    | 316                                   | 138                                                   | Rev.B better      |
| I <sub>DD6N</sub> (mA)                        | 26                                    | 32                                                    | Rev.A better      |
| I <sub>DD6R</sub> (mA)                        | 18                                    | 19                                                    | Rev.A better      |
| I <sub>DD6E</sub> (mA)                        | 38                                    | 52                                                    | Rev.A better      |
| I <sub>DD7</sub> (mA)                         | 279                                   | 225                                                   | Rev.B better      |
| Package                                       | 96b FBGA<br>7.5x13x1.2mm              | 96b FBGA<br>7.5x13x1.2mm                              | Same              |
| Solder Ball material Composition              | SAC305<br>(96.5% Sn, 3% Ag, 0.5% Cu). | SACQ<br>(92.45% Sn, 4% Ag, 0.5% Cu, 3% Bi, 0.05% Ni). | Different         |
| Package Material                              | Pb and Halogen Free                   | Pb and Halogen Free                                   | Same              |