

### AS4C16M32MSA-6BIN vs AS4C16M32MSB-6BIN Comparison

| Part Number & result<br>Parameter | AS4C16M32MSA-6BIN<br>(rev.A)             | AS4C16M32MSB-6BIN<br>(rev.B)             | Comparison Result |
|-----------------------------------|------------------------------------------|------------------------------------------|-------------------|
| Product Description               | Low Power SDRAM                          | Low Power SDRAM                          | Same              |
| Fab/Process Technology            | PSMC/63nm                                | WEC/65nm                                 | Different IPs     |
| Capacity                          | 512Mb (16M x 32)                         | 512Mb (16M x 32)                         | Same              |
| Memory Organization               | 4M, x32 bits, x4 banks                   | 4M, x32 bits, x4 banks                   | Same              |
| Operating Power Supply            | VDD/Q = 1.7V ~1.95V                      | VDD/Q = 1.7V ~1.95V                      | Same              |
| Operating Temperature             | Industrial (-40°C to 85°C)               | Industrial (-40°C to 85°C)               | Same              |
| Max. Clock Frequency              | 166MHz                                   | 166MHz                                   | Same              |
| Clock Cycle time "tCK" (ns)       | 6                                        | 6                                        | Same              |
| CAS Latency                       | 1, 2 & 3                                 | 2 & 3                                    | Different         |
| Burst Length                      | 1,2,4,8 & full page                      | 1,2,4,8 & full page                      | Same              |
| tRCD & tRP (ns)                   | 18                                       | 18                                       | Same              |
| Row Address                       | A0-A12                                   | A0-A12                                   | Same              |
| Column Address                    | A0-A8                                    | A0-A8                                    | Same              |
| Average Refresh Period            | 8192 cycles/64ms                         | 8192 cycles/64ms                         | Same              |
| I/O Capacitance                   | CIO: 4pf to 6pf                          | CIO: 4pf to 6pf                          | Same              |
| Pin to Pin Compatible             | Pin to Pin Compatible                    |                                          | Same              |
| AC/DC Characteristics             | Same                                     | Same                                     | Meet JEDEC        |
| <b>IDD Specification</b>          |                                          |                                          |                   |
| IDD Spec conditions               | -40C ≤ Ta ≤ 85C<br>VDD/Q = 1.7V to 1.95V | -40C ≤ Ta ≤ 85C<br>VDD/Q = 1.7V to 1.95V |                   |
| IDD1 (mA)                         | 80                                       | 38                                       | Rev.B better      |
| IDD2P (mA)                        | 0.3                                      | 0.3                                      | Comparable        |
| IDD2N (mA)                        | 15                                       | 10                                       | Comparable        |
| IDD3P (mA)                        | 5                                        | 3                                        | Comparable        |
| IDD3N (mA)                        | 15                                       | 25                                       | Comparable        |
| IDD4 (mA)                         | 100                                      | 75                                       | Comparable        |
| IDD5 (mA)                         | 110                                      | 75                                       | Rev.B better      |
| IDD6 (uA)                         | 700                                      | 450                                      | Rev.B better      |
| IDD7 (uA)                         | 10                                       | 10                                       | Comparable        |
| Package                           | 90b FBGA (8x13mm)                        | 90b FBGA (8x13mm)                        | Same              |
| Package Material                  | Pb & Halogen Free                        | Pb & Halogen Free                        | Same              |