

# Approval Sheet

|                              |                                      |
|------------------------------|--------------------------------------|
| <b>Customer</b>              |                                      |
| <b>Product Number</b>        | <b>M5SZ-BGM2O50Q-D</b>               |
| <b>Data Rate</b>             | <b>5600 MT/s</b>                     |
| <b>Pin</b>                   | <b>262 pin</b>                       |
| <b>CI-tRCD-tRP</b>           | <b>46-45-45</b>                      |
| <b>Operating temperature</b> | <b>Tc=-40 to 95°C</b>                |
| <b>Date</b>                  | <b>15<sup>th</sup> February 2024</b> |

**The Total Solution For  
Industrial Flash Storage**

Rev 1.0

## 1. Features

- JEDEC Standard 262-pin Small Outline Dual In-Line Memory Module
- VDD=VDDQ= 1.1V (1.067V ~ 1.166V)
- VPP=1.8V (1.746V ~ 1.908V)
- VDDSPD= 1.8V
- On-die, internal, adjustable VREF generation for DQ,CA,CS
- 16n-bit prefetch
- Two independent I/O sub channels
- Programmable /CAS Latency: 22,26,28,30,32,36,40,42,46,50
- tREFI 3.9us for  $-40^{\circ}\text{C} \leq T_{\text{case}} < 85^{\circ}\text{C}$ , tREFI 1.95us for  $85^{\circ}\text{C} < T_{\text{case}} \leq 95^{\circ}\text{C}$
- On-Die ECC
- PMIC on DIMM, nominal supply 5V/2A, VIN\_Bulk input supply range: 4.25 V to 5.5 V
- Fly-by topology
- I3C/I2C support
- Terminated control and C/A bus
- SPD EEPROM Hub and Integrated Thermal Sensor
- Halogen-free

| <b>Specification</b> |           |                  |                   |              |                |      |     |
|----------------------|-----------|------------------|-------------------|--------------|----------------|------|-----|
| Density              | Data Rate | IC Configuration | DIMM Organization | Number of IC | Number of rank | Side | ECC |
| 32GB                 | 5600 MT/s | 2Gx8 (16Gb)      | 4Gx64             | 16           | 2              | 2    | N   |

| <b>Key timing parameters</b> |              |             |              |             |
|------------------------------|--------------|-------------|--------------|-------------|
| tCK<br>(ns)                  | tRCD<br>(ns) | tRP<br>(ns) | tRAS<br>(ns) | tRC<br>(ns) |
| 0.357                        | 16.00        | 16.00       | 32           | 48.00       |

| <b>tRFC parameter by IC Configuration</b> |                  |      |      |      |      |
|---|------------------|------|------|------|------|
| Parameter                                 | IC Configuration |      |      |      | Unit |
|   | 8Gb              | 16Gb | 24Gb | 32Gb |      |
| tRFC1,min                                 | 195              | 295  | TBD  | TBD  | ns   |
| tRFC2,min                                 | 130              | 160  | TBD  | TBD  | ns   |
| tRFCsb,min                                | 115              | 130  | TBD  | TBD  | ns   |

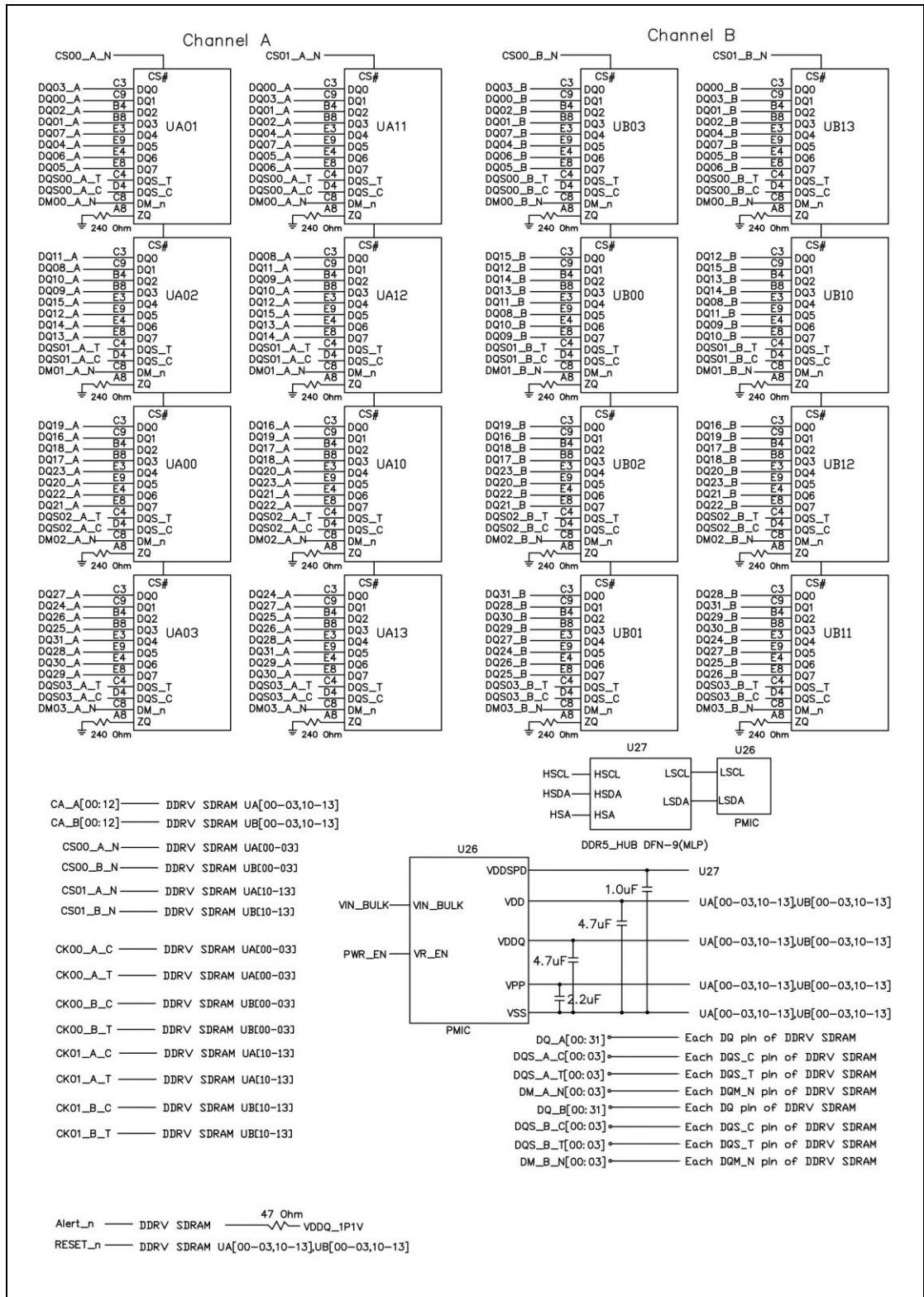
## 2. Pin Assignments

| 262-Pin DDR5 SODIMM Front |          |     |          |     |          |     |          | 262-Pin DDR5 SODIMM Back |          |     |          |     |          |     |          |
|---------------------------|----------|-----|----------|-----|----------|-----|----------|--------------------------|----------|-----|----------|-----|----------|-----|----------|
| Pin                       | Symbol   | Pin | Symbol   | Pin | Symbol   | Pin | Symbol   | Pin                      | Symbol   | Pin | Symbol   | Pin | Symbol   | Pin | Symbol   |
| 1                         | VIN_BULK | 67  | Vss      | 133 | CK0_A_c  | 199 | DQ8_B    | 2                        | HAS      | 68  | DQ21_A   | 134 | CK1_A_c  | 200 | Vss      |
| 3                         | VIN_BULK | 69  | DQ22_A   | 135 | Vss      | 201 | Vss      | 4                        | HSCL     | 70  | Vss      | 136 | Vss      | 202 | DQ9_B    |
| 5                         | RFU      | 71  | Vss      | 137 | CK0_B_t  | 203 | DQ10_B   | 6                        | HSDA     | 72  | DQ23_A   | 138 | CK1_B_t  | 204 | Vss      |
| 7                         | PWR_GOOD | 73  | DQ24_A   | 139 | CK0_B_c  | 205 | Vss      | 8                        | PWR_EN   | 74  | Vss      | 140 | CK1_B_c  | 206 | DQ11_B   |
| 9                         | Vss      | 75  | Vss      | 141 | Vss      | 207 | DQS1_B_c | 10                       | Vss      | 76  | DQ25_A   | 142 | Vss      | 208 | Vss      |
| 11                        | DQ0_A    | 77  | DQ26_A   | 143 | RFU      | 209 | DQS1_B_t | 12                       | DQ1_A    | 78  | Vss      | 144 | CA12_B   | 210 | DM1_B_n  |
| 13                        | Vss      | 79  | Vss      | 145 | CA11_B   | 211 | Vss      | 14                       | Vss      | 80  | DQ27_A   | 146 | CA10_B   | 212 | Vss      |
| 15                        | DQ2_A    | 81  | DQS3_A_c | 147 | Vss      | 213 | DQ12_B   | 16                       | DQ3_A    | 82  | Vss      | 148 | Vss      | 214 | DQ13_B   |
| 17                        | Vss      | 83  | DQS3_A_t | 149 | CA9_B    | 215 | Vss      | 18                       | Vss      | 84  | DM3_A_n  | 150 | CA8_B    | 216 | Vss      |
| 19                        | DM0_A_n  | 85  | Vss      | 151 | CA7_B    | 217 | DQ14_B   | 20                       | DQS0_A_c | 86  | Vss      | 152 | CA6_B    | 218 | DQ15_B   |
| 21                        | Vss      | 87  | DQ28_A   | 153 | Vss      | 219 | Vss      | 22                       | DQS0_A_t | 88  | DQ29_A   | 154 | Vss      | 220 | Vss      |
| 23                        | DQ4_A    | 89  | Vss      | 155 | CA5_B    | 221 | DQ16_B   | 24                       | Vss      | 90  | Vss      | 156 | CA4_B    | 222 | DQ17_B   |
| 25                        | Vss      | 91  | DQ30_A   | 157 | CA3_B    | 223 | Vss      | 26                       | DQ5_A    | 92  | DQ31_A   | 158 | CA2_B    | 224 | Vss      |
| 27                        | DQ6_A    | 93  | Vss      | 159 | Vss      | 225 | DQ18_B   | 28                       | Vss      | 94  | Vss      | 160 | Vss      | 226 | DQ19_B   |
| 29                        | Vss      | 95  | CB0_A    | 161 | CS0_B_n  | 227 | Vss      | 30                       | DQ7_A    | 96  | CB1_A    | 162 | CA1_B    | 228 | Vss      |
| 31                        | DQ8_A    | 97  | Vss      | 163 | RESET_n  | 229 | DM2_B_n  | 32                       | Vss      | 98  | Vss      | 164 | CA0_B    | 230 | DQS2_B_c |
| 33                        | Vss      | 99  | CB2_A    | 165 | CS1_B_n  | 231 | Vss      | 34                       | DQ9_A    | 100 | DQS4_A_c | 166 | Vss      | 232 | DQS2_B_t |
| 35                        | DQ10_A   | 101 | Vss      | 167 | Vss      | 233 | DQ20_B   | 36                       | Vss      | 102 | DQS4_A_t | 168 | CB0_B    | 234 | Vss      |
| 37                        | Vss      | 103 | CB3_A    | 169 | DQS4_B_c | 235 | Vss      | 38                       | DQ11_A   | 104 | Vss      | 170 | Vss      | 236 | DQ21_B   |
| 39                        | DQS1_A_c | 105 | Vss      | 171 | DQS4_B_t | 237 | DQ22_B   | 40                       | Vss      | 106 | CS0_A_n  | 172 | CB1_B    | 238 | Vss      |
| 41                        | DQS1_A_t | 107 | CA0_A    | 173 | Vss      | 239 | Vss      | 42                       | DM1_A_n  | 108 | ALERT_n  | 174 | Vss      | 240 | DQ23_B   |
| 43                        | Vss      | 109 | CA1_A    | 175 | CB3_B    | 241 | DQ24_B   | 44                       | Vss      | 110 | CS1_A_n  | 176 | CB2_B    | 242 | Vss      |
| 45                        | DQ12_A   | 111 | Vss      | 177 | Vss      | 243 | Vss      | 46                       | DQ13_A   | 112 | Vss      | 178 | Vss      | 244 | DQ25_B   |
| 47                        | Vss      | 113 | CA2_A    | 179 | DQ0_B    | 245 | DQ26_B   | 48                       | Vss      | 114 | CA3_A    | 180 | DQ1_B    | 246 | Vss      |
| 49                        | DQ14_A   | 115 | CA4_A    | 181 | Vss      | 247 | Vss      | 50                       | DQ_15_A  | 116 | CA5_A    | 182 | Vss      | 248 | DQ27_B   |
| 51                        | Vss      | 117 | Vss      | 183 | DQ2_B    | 249 | DQS3_B_c | 52                       | Vss      | 118 | Vss      | 184 | DQ3_B    | 250 | Vss      |
| 53                        | DQ16_A   | 119 | CA6_A    | 185 | Vss      | 251 | DQS3_B_t | 54                       | DQ17_A   | 120 | CA7_A    | 186 | Vss      | 252 | DM3_B_n  |
| 55                        | Vss      | 121 | CA8_A    | 187 | DM0_B_n  | 253 | Vss      | 56                       | Vss      | 122 | CA9_A    | 188 | DQS0_B_c | 254 | Vss      |
| 57                        | DQ18_A   | 123 | Vss      | 189 | Vss      | 255 | DQ28_B   | 58                       | DQ19_A   | 124 | Vss      | 190 | DQS0_B_t | 256 | DQ29_B   |
| 59                        | Vss      | 125 | CA10_A   | 191 | DQ4_B    | 257 | Vss      | 60                       | Vss      | 126 | CA11_A   | 192 | Vss      | 258 | Vss      |
| 61                        | DM2_A_n  | 127 | CA12_A   | 193 | Vss      | 259 | DQ30_B   | 62                       | DQS2_A_c | 128 | RFU      | 194 | DQ5_B    | 260 | DQ31_B   |
| 63                        | Vss      | 129 | Vss      | 195 | DQ6_B    | 261 | Vss      | 64                       | DQS2_A_t | 130 | Vss      | 196 | Vss      | 262 | Vss      |
| 65                        | DQ20_A   | 131 | CK0_A_t  | 197 | Vss      |     |          | 66                       | Vss      | 132 | CK1_A_t  | 198 | DQ7_B    |     |          |

### 3. Pin Descriptions

| Symbol                   | Type             | I/O Level | Description                   | Symbol                       | Type             | I/O Level | Description                 |
|--------------------------|------------------|-----------|-------------------------------|------------------------------|------------------|-----------|-----------------------------|
| CK_t, CK_c               | Input            | VDDQ      | Clock                         | DQ[31:0]_A<br>DQ[31:0]_B     | Input/<br>Output | VDDQ      | Data Input/Output           |
| CA[12:0]_A<br>CA[12:0]_B | Input            | VDDQ      | Command/Address Inputs        | CB[3:0]_A<br>CB[3:0]_B       | Input/<br>Output | VDDQ      | ECC Check Bits Input/Output |
| CS[1:0]_A<br>CS[1:0]_B   | Input            | VDDQ      | Chip Select                   | DQS[4:0]_A_t<br>DQS[4:0]_B_t | Input/<br>Output | VDDQ      | Data Strobe                 |
| ALERT_n                  | Output           | VDDQ      | Alert                         | DQS[4:0]_A_c<br>DQS[4:0]_B_c | Input/<br>Output | VDDQ      | Data Strobe                 |
| RESET_n                  | CMOS<br>Input    | VDDQ      | Active Low Asynchronous Reset | DM[3:0]_A_n<br>DM[3:0]_B_n   | Input            | VDDQ      | Input Data Mask             |
| PWR_GOOD                 | Input/<br>Output | VDDQ      | Power Good Indicator          | VIN_BULK                     | Supply           |           | External Power Supply       |
| HSCL                     | Input            | VOUT      | Host Sideband Bus Clock       | PWR_EN                       | Input            |           | PMIC Enable                 |
| HSDA                     | Input/<br>Output | VOUT      | Host Sideband Bus Data        | VSS                          | Supply           |           | Ground                      |
| HSA                      | Input            | GND       | Host Sideband Bus Device ID   | RFU                          |                  |           | Reserved for future use     |

### 4. Function Block Diagram



## 5. Thermal Characteristics

| Symbol           | Parameter             |                        | Rating     | Units | Note    |
|------------------|-----------------------|------------------------|------------|-------|---------|
| T <sub>C</sub>   | Operation Temperature | Normal Operating Temp. | -40 to 95  | °C    | 1,2,3,4 |
| T <sub>STG</sub> | Storage Temperature   |                        | -55 to 100 | °C    | 5       |

**Note:**

1. Maximum operating case temperature; T<sub>C</sub> is measured in the center of the package.
2. A thermal solution must be designed to ensure the DRAM device does not exceed the maximum T<sub>C</sub> during operation.
3. Device functionality is not guaranteed if the DRAM device exceeds the maximum T<sub>C</sub> during operation.
4. If T<sub>C</sub> exceeds 85°C, the DRAM must be refreshed externally at 2X refresh, which is a 1.95μs interval refresh rate.
5. Storage temperature is defined as the temperature of the top/center of the DRAM and does not reflect the storage temperatures of shipping trays.

## 6. IDD, IDDQ and IPP Specifications

| Symbol | Description                                      | Value<br>(Typical) |          | Units |
|--------|--|--------------------|----------|-------|
|        |  | IDD Max.           | IPP Max. |       |
| IDD0   | Operating One Bank Active-Precharge Current      | 816                | 128      | mA    |
| IDD0F  | Operating Four Bank Active-Precharge Current     | 1112               | 144      | mA    |
| IDD2N  | Precharge Standby Current                        | 784                | 112      | mA    |
| IDD2P  | Precharge Power-Down Current                     | 752                | 112      | mA    |
| IDD3N  | Active Standby Current                           | 1776               | 128      | mA    |
| IDD3P  | Active Power-Down Current                        | 1760               | 128      | mA    |
| IDD4R  | Operating Burst Read Current                     | 2496               | 136      | mA    |
| IDD4W  | Operating Burst Write Current                    | 2544               | 240      | mA    |
| IDD5B  | Burst Refresh Current (Normal Refresh Mode)      | 3848               | 320      | mA    |
| IDD5C  | Burst Refresh Current (Same Bank Refresh Mode)   | 1576               | 168      | mA    |
| IDD6N  | Self Refresh Current                             | 1792               | 240      | mA    |
| IDD6E  | Self Refresh Current: Extended Temperature Range | 2976               | 320      | mA    |
| IDD7   | Operating Bank Interleave Read Current           | 3480               | 248      | mA    |
| IDD8   | Maximum Power Saving Deep Power Down Current     | 672                | 112      | mA    |

The above information may be change due to the update of the device specifications and is for reference only.

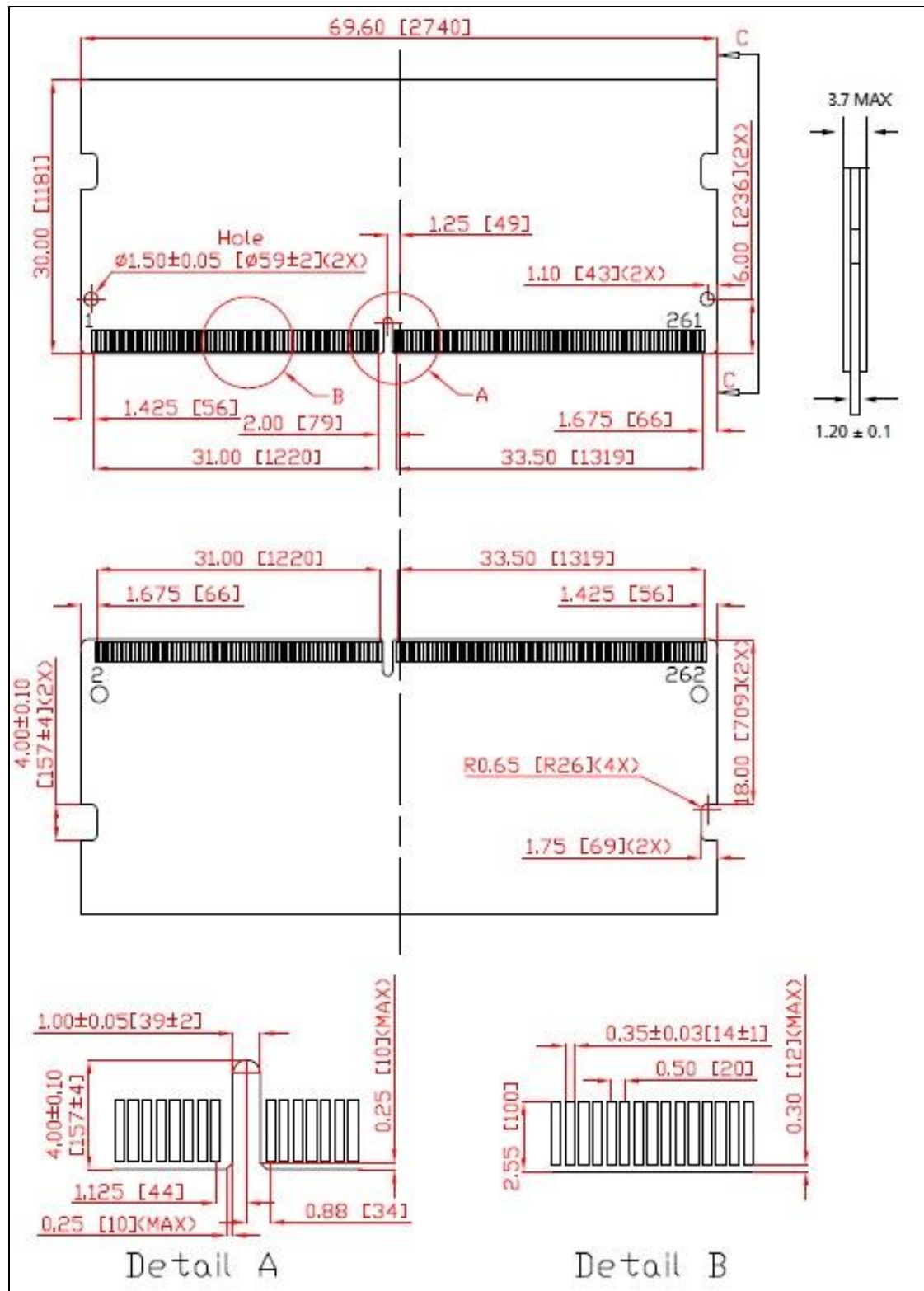
## 7. Timing Parameters

| Parameter   | Symbol     | 5600                    |     | 6000                    |     | 6400                    |     | Unit |
|---|------------|-------------------------|-----|-------------------------|-----|-------------------------|-----|------|
|   |            | Min                     | Max | Min                     | Max | Min                     | Max |      |
| <b>Clock Timing</b>   |            |                         |     |                         |     |                         |     |      |
| Average clock period  | tCK,AVG    | 0.357                   |     | 0.333                   |     | 0.312                   |     | ns   |
| <b>Command and Address Timing</b>   |            |                         |     |                         |     |                         |     |      |
| Read to Read command delay for same bank group  | tCCD_L     | 8nCK,5ns<br>(MAX)       |     | 8nCK,5ns<br>(MAX)       |     | 8nCK,5ns<br>(MAX)       |     | nCK  |
| WRITE to WRITE command delay for same bank group  | tCCD_L_WR  | 32nCK,<br>20ns<br>(MAX) |     | 32nCK,<br>20ns<br>(MAX) |     | 32nCK,<br>20ns<br>(MAX) |     | nCK  |
| WRITE to WRITE command delay for same bank group, second WRITE not RMW                  | tCCD_L_WR2 | 16nCK,<br>10ns<br>(MAX) |     | 16nCK,<br>10ns<br>(MAX) |     | 16nCK,<br>10ns<br>(MAX) |     | nCK  |
| Read to Read or Write to Write command delay for different bank group for BL16, BC8 OTF | tCCD_S     | 8                       |     | 8                       |     | 8                       |     | nCK  |
| ACTIVATE to ACTIVATE command delay to different bank group for 2KB page size            | tRRD_S,2K  | 8                       |     | 8                       |     | 8                       |     | nCK  |
| ACTIVATE to ACTIVATE command delay to different bank group for 1KB page size            | tRRD_S,1K  | 8                       |     | 8                       |     | 8                       |     | nCK  |
| ACTIVATE to ACTIVATE command delay to same bank group for 2KB page size                 | tRRD_L,2K  | 8nCK,5ns<br>(MAX)       |     | 8nCK,5ns<br>(MAX)       |     | 8nCK,5ns<br>(MAX)       |     | nCK  |
| ACTIVATE to ACTIVATE command delay to same bank group for 1KB page size                 | tRRD_L,1K  | 8nCK,5ns<br>(MAX)       |     | 8nCK,5ns<br>(MAX)       |     | 8nCK,5ns<br>(MAX)       |     | nCK  |
| Four activate window for  | tFAW,2K    | 40nCK,                  |     | 40nCK,                  |     | 40nCK,                  |     | ns   |



|   |         |                             |  |                             |  |                             |  |     |
|---|---------|-----------------------------|--|-----------------------------|--|-----------------------------|--|-----|
| 2KB page size   |         | 14.280ns<br>(MAX)           |  | 13.333ns<br>(MAX)           |  | 12.500ns<br>(MAX)           |  |     |
| Four activate window for<br>1KB page size   | tFAW,1K | 32nCK,<br>11.428ns<br>(MAX) |  | 32nCK,<br>10.666ns<br>(MAX) |  | 32nCK,<br>10.000ns<br>(MAX) |  | ns  |
| Delay from start of internal<br>WRITE transaction to<br>internal READ command<br>for different bank group             | tWTR_S  | 2.5                         |  | 2.5                         |  | 2.5                         |  | ns  |
| Delay from start of internal<br>WRITE transaction to<br>internal READ command<br>for same bank group                  | tWTR_L  | 10                          |  | 10                          |  | 10                          |  | ns  |
| Delay from start of internal<br>WRITE transaction to<br>internal READ with AUTO<br>PRECHARGE command for<br>same bank | tWTRA   | tWR-tRTP                    |  | tWR-tRTP                    |  | tWR-tRTP                    |  | ns  |
| Internal READ command<br>to PRECHARGE command<br>delay  | tRTP    | 7.5                         |  | 7.5                         |  | 7.5                         |  | ns  |
| PRECHARGE to PRECHARGE<br>delay   | tPPD    | 2                           |  | 2                           |  | 2                           |  | nCK |
| WRITE recovery time   | tWR     | 30                          |  | 30                          |  | 30                          |  | ns  |

### 8. Module Dimensions



Note: All dimensions are in millimeters (mils) and should be kept within a tolerance of  $\pm 0.15$  (6), unless otherwise specified.

## 9. RoHS Declaration

|   | <b>宜鼎國際股份有限公司</b><br><b>Innodisk Corporation</b> | Page 1/2 |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
|--|--|----------|-----------------------------|-----------------------------|--------|------------|--------|------------|--------|-----------|-------------|------------|-------------|------------|---------------|------------|------------------------|------------|------------------|------------|----------------|------------|------------------|------------|
| Tel:(02)7703-3000 Internet: <a href="https://www.innodisk.com/">https://www.innodisk.com/</a>  |  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| <b>RoHS 自我宣告書 (RoHS Declaration of Conformity)</b>   |  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| <b>Manufacturer Products: All Innodisk EM FLASH, DRAM and EP products</b>  |  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| <p>一、 宜鼎國際股份有限公司（以下稱本公司）特此保證售予貴公司之所有產品，皆符合歐盟 2011/65/EU 及 (EU) 2015/863 關於 RoHS 之規範要求。<br/>         Innodisk Corporation declares that all products sold to the company, are complied with European Union RoHS Directive (2011/65/EU) and (EU) 2015/863 requirement.</p>   |  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| <p>二、 本公司同意因本保證書或與本保證書相關事宜有所爭議時，雙方宜友好協商，達成協議。<br/>         Innodisk Corporation agrees that both parties shall settle any dispute arising from or in connection with this Declaration of Conformity by friendly negotiations.</p>  |  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| <p>三、 本公司聲明我們的產品符合 RoHS 指令的附件中 7(a)、7(c)-1、6(c) 允許豁免。<br/>         We declare, our products permitted by the following exemptions specified in the Annex of the RoHS directive.</p>  |  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| <p>※ 7(a) Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead).</p>  |  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| <p>※ 7(c)-1 Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound.</p>  |  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| <p>※ 6(c) Copper alloy containing up to 4% lead by weight. (This exemption applies to products that use antennas)</p>  |  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Name of hazardous substance</th> <th style="text-align: left;">Limited of RoHS ppm (mg/kg)</th> </tr> </thead> <tbody> <tr> <td>鉛 (Pb)</td> <td>&lt; 1000 ppm</td> </tr> <tr> <td>汞 (Hg)</td> <td>&lt; 1000 ppm</td> </tr> <tr> <td>鎘 (Cd)</td> <td>&lt; 100 ppm</td> </tr> <tr> <td>六價鉻 (Cr 6+)</td> <td>&lt; 1000 ppm</td> </tr> <tr> <td>多溴聯苯 (PBBs)</td> <td>&lt; 1000 ppm</td> </tr> <tr> <td>多溴二苯醚 (PBDEs)</td> <td>&lt; 1000 ppm</td> </tr> <tr> <td>鄰苯二甲酸二(2-乙基己基)酯 (DEHP)</td> <td>&lt; 1000 ppm</td> </tr> <tr> <td>鄰苯二甲酸丁酯苯甲酯 (BBP)</td> <td>&lt; 1000 ppm</td> </tr> <tr> <td>鄰苯二甲酸二丁酯 (DBP)</td> <td>&lt; 1000 ppm</td> </tr> <tr> <td>鄰苯二甲酸二異丁酯 (DIBP)</td> <td>&lt; 1000 ppm</td> </tr> </tbody> </table> |  |          | Name of hazardous substance | Limited of RoHS ppm (mg/kg) | 鉛 (Pb) | < 1000 ppm | 汞 (Hg) | < 1000 ppm | 鎘 (Cd) | < 100 ppm | 六價鉻 (Cr 6+) | < 1000 ppm | 多溴聯苯 (PBBs) | < 1000 ppm | 多溴二苯醚 (PBDEs) | < 1000 ppm | 鄰苯二甲酸二(2-乙基己基)酯 (DEHP) | < 1000 ppm | 鄰苯二甲酸丁酯苯甲酯 (BBP) | < 1000 ppm | 鄰苯二甲酸二丁酯 (DBP) | < 1000 ppm | 鄰苯二甲酸二異丁酯 (DIBP) | < 1000 ppm |
| Name of hazardous substance  | Limited of RoHS ppm (mg/kg)                      |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 鉛 (Pb)   | < 1000 ppm                                       |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 汞 (Hg)   | < 1000 ppm                                       |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 鎘 (Cd)   | < 100 ppm  |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 六價鉻 (Cr 6+)  | < 1000 ppm                                       |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 多溴聯苯 (PBBs)  | < 1000 ppm                                       |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 多溴二苯醚 (PBDEs)  | < 1000 ppm                                       |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 鄰苯二甲酸二(2-乙基己基)酯 (DEHP)   | < 1000 ppm                                       |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 鄰苯二甲酸丁酯苯甲酯 (BBP)   | < 1000 ppm                                       |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 鄰苯二甲酸二丁酯 (DBP)   | < 1000 ppm                                       |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |
| 鄰苯二甲酸二異丁酯 (DIBP)   | < 1000 ppm                                       |          |                             |                             |        |            |        |            |        |           |             |            |             |            |               |            |                        |            |                  |            |                |            |                  |            |

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宜鼎國際股份有限公司  
Innodisk Corporation

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立 保 證 書 人 (Guarantor)

Company name 公司名稱： Innodisk Corporation 宜鼎國際股份有限公司

Company Representative 公司代表人： 簡川勝

Company Representative Title 公司代表人職稱： Chairman 董事長

Date 日期： 2023 / 06 / 14



## 10. REACH Declaration

innodisk

宜鼎國際股份有限公司  
Innodisk Corporation  
REACH Declaration

Tel: (02) 7703-3000 Fax: (02) 7703-3555 Internet: <https://www.innodisk.com/>

Innodisk Corporation pursues its social responsibility for global environmental preservation by committing to be compliant with REACH regulation (REGULATION (EC) No 1907/2006). We hereby confirm that the product(s),

**Scope: Flash Memory, DRAM Module and Embedded Peripherals Products.**

- The standard products of **not listed in the Appendix 2** meet the requirements of REACH SVHC regulations (SVHCs < 0.1% in Article), as described in the candidate list table currently including 235 substances (release date: 14-JUN-2023) and shown on the ECHA website. <https://echa.europa.eu/candidate-list-table>
- The standard products listed in the Appendix 2 contain(s) one or more hazardous substances or constituents exceeding 0.1 % by weight in article if not otherwise specified in candidate list table.  
Where the threshold value is exceeded, the substances in question are to be declared in accompanying. (SVHCs > 0.1% in Article).
- Comply with REACH Annex XVII.

## Guarantor

Company name 公司名稱: Innodisk Corporation 宜鼎國際股份有限公司

Company Representative 公司代表人:  Yichuan Chen 陳怡全

Company Representative Title 公司代表人職稱: QA Div. Manager 品保處經理

Date 日期: 2023 / 07 / 13



## Revision Log

| Rev | Date                           | Modification        |
|-----|--------------------------------|---------------------|
| 0.1 | 15 <sup>th</sup> February 2024 | Preliminary Edition |
| 1.0 | 15 <sup>th</sup> February 2024 | Official Released   |