

# JM1333KSN-4G

204PIN DDR3 1333Mhz SODIMM  
4096MB With 256Mx8 CL9

## Description

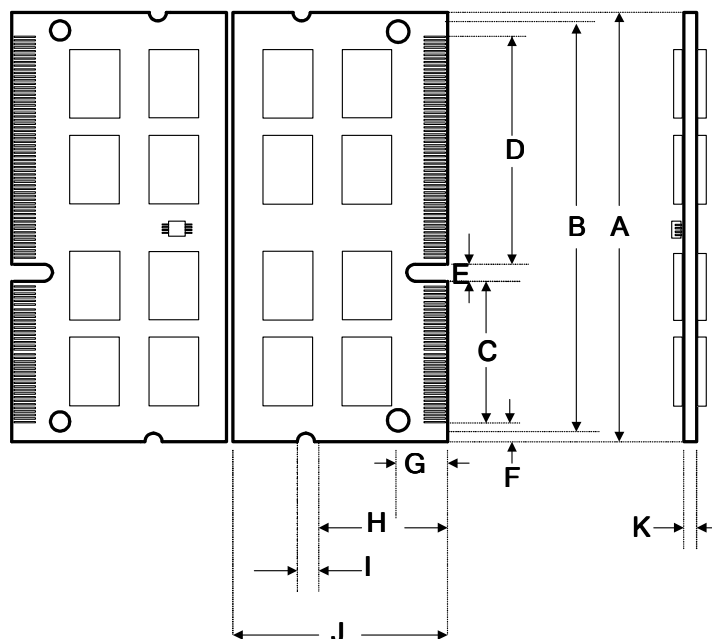
The JM1333KSN-4G is a 512M x 64bits DDR3-1333 SO-DIMM. The JM1333KSN-4G consists of 16pcs 256Mx8bits DDR3 SDRAMs FBGA packages and a 2048 bits serial EEPROM on a 204-pin printed circuit board. The JM1333KSN-4G is a Dual In-Line Memory Module and is intended for mounting into 204-pin edge connector sockets.

Synchronous design allows precise cycle control with the use of system clock. Data I/O transactions are possible on both edges of DQS. Range of operation frequencies, programmable latencies allow the same device to be useful for a variety of high bandwidth, high performance memory system applications.

## Features

- RoHS compliant products.
- JEDEC standard 1.5V  $\pm$  0.075V Power supply
- VDDQ=1.5V  $\pm$  0.075V
- Clock Freq: 667MHZ for 1333Mb/s/Pin.
- Programmable CAS Latency: 5, 6, 7, 8, 9
- Programmable Additive Latency (Posted /CAS): 0, CL-2 or CL-1 clock
- Programmable /CAS Write Latency (CWL) = 7 (DDR3-1333)
- 8 bit pre-fetch  
Burst Length: 4, 8
- Bi-directional Differential Data-Strobe
- Internal calibration through ZQ pin
- On Die Termination with ODT pin
- Serial presence detect with EEPROM
- Asynchronous reset

## ■ Placement



PCB: 09-2842

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## Dimensions

| Side | Millimeters | Inches      |
|------|-------------|-------------|
| A    | 67.60±0.15  | 2.661±0.006 |
| B    | 63.60       | 2.503       |
| C    | 22.38       | 0.881       |
| D    | 40.08       | 1.578       |
| E    | 1.00        | 0.039       |
| F    | 2.15±0.15   | 0.085±0.006 |
| G    | 6.00        | 0.236       |
| H    | 18.00       | 0.709       |
| I    | 4.00        | 0.157       |
| J    | 30.00       | 1.181       |
| K    | 1.0±0.1     | 0.039±0.004 |

(Refer Placement)

## Pin Identification

| Symbol                                   | Function                                 |
|------------------------------------------|------------------------------------------|
| A0~A15, BA0~BA2                          | Address/Bank input                       |
| DQ0~DQ63                                 | Data Input / Output.                     |
| DQS0~DQS7                                | Data strobes                             |
| /DQS0~/DQS7                              | Differential Data strobes                |
| CK0, /CK0,CK1, /CK1                      | Clock Input. (Differential pair)         |
| CKE0, CKE1                               | Clock Enable Input.                      |
| ODT0, ODT1                               | On-die termination control line          |
| /CS0, /CS1                               | DIMM Rank Select Lines.                  |
| /RAS                                     | Row Address Strobe                       |
| /CAS                                     | Column Address Strobe                    |
| /WE                                      | Write Enable                             |
| DM0~DM7                                  | Data masks/high data strobes             |
| VDD                                      | Voltage power supply                     |
| VDDQ                                     | Voltage Power Supply for DQS             |
| V <sub>REF</sub> DQ/ V <sub>REF</sub> CA | Power Supply for Reference               |
| VDDSPD                                   | SPD EEPROM Power Supply                  |
| SA0~SA2                                  | I2C serial bus address select for EEPROM |
| SCL                                      | I2C serial bus clock for EEPROM          |
| SDA                                      | I2C serial bus data for EEPROM           |
| VSS                                      | Ground                                   |
| /RESET                                   | Set DRAMs Known State                    |
| VTT                                      | SDRAM I/O termination supply             |
| NC                                       | No Connection                            |

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## Pinouts:

| Pin No | Pin Name | Pin No | Pin Name | Pin No | Pin Name | Pin No | Pin Name | Pin No | Pin Name | Pin No | Pin Name |
|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|
| 01     | VREFDQ   | 69     | DQ27     | 137    | DQS4     | 02     | VSS      | 70     | DQ31     | 138    | VSS      |
| 03     | VSS      | 71     | VSS      | 139    | VSS      | 04     | DQ4      | 72     | VSS      | 140    | DQ38     |
| 05     | DQ0      | 73     | CKE0     | 141    | DQ34     | 06     | DQ5      | 74     | CKE1     | 142    | DQ39     |
| 07     | DQ1      | 75     | VDD      | 143    | DQ35     | 08     | VSS      | 76     | VDD      | 144    | VSS      |
| 09     | VSS      | 77     | NC       | 145    | VSS      | 10     | DQS0     | 78     | A15      | 146    | DQ44     |
| 11     | DM0      | 79     | BA2      | 147    | DQ40     | 12     | /DQS0    | 80     | A14      | 148    | DQ45     |
| 13     | VSS      | 81     | VDD      | 149    | DQ41     | 14     | VSS      | 82     | VDD      | 150    | VSS      |
| 15     | DQ2      | 83     | A12      | 151    | VSS      | 16     | DQ6      | 84     | A11      | 152    | /DQS5    |
| 17     | DQ3      | 85     | A9       | 153    | DM5      | 18     | DQ7      | 86     | A7       | 154    | DQS5     |
| 19     | VSS      | 87     | VDD      | 155    | VSS      | 20     | VSS      | 88     | VDD      | 156    | VSS      |
| 21     | DQ8      | 89     | A8       | 157    | DQ42     | 22     | DQ12     | 90     | A6       | 158    | DQ46     |
| 23     | DQ9      | 91     | A5       | 159    | DQ43     | 24     | DQ13     | 92     | A4       | 160    | DQ47     |
| 25     | VSS      | 93     | VDD      | 161    | VSS      | 26     | VSS      | 94     | VDD      | 162    | VSS      |
| 27     | /DQS1    | 95     | A3       | 163    | DQ48     | 28     | DM1      | 96     | A2       | 164    | DQ52     |
| 29     | DQS1     | 97     | A1       | 165    | DQ49     | 30     | /RESET   | 98     | A0       | 166    | DQ53     |
| 31     | VSS      | 99     | VDD      | 167    | VSS      | 32     | VSS      | 100    | VDD      | 168    | VSS      |
| 33     | DQ10     | 101    | CK0      | 169    | /DQS6    | 34     | DQ14     | 102    | CK1      | 170    | DM6      |
| 35     | DQ11     | 103    | /CK0     | 171    | DQS6     | 36     | DQ15     | 104    | /CK1     | 172    | VSS      |
| 37     | VSS      | 105    | VDD      | 173    | VSS      | 38     | VSS      | 106    | VDD      | 174    | DQ54     |
| 39     | DQ16     | 107    | A10/AP   | 175    | DQ50     | 40     | DQ20     | 108    | BA1      | 176    | DQ55     |
| 41     | DQ17     | 109    | BA0      | 177    | DQ51     | 42     | DQ21     | 110    | /RAS     | 178    | VSS      |
| 43     | VSS      | 111    | VDD      | 179    | VSS      | 44     | VSS      | 112    | VDD      | 180    | DQ60     |
| 45     | /DQS2    | 113    | /WE      | 181    | DQ56     | 46     | DM2      | 114    | /CS0     | 182    | DQ61     |
| 47     | DQS2     | 115    | /CAS     | 183    | DQ57     | 48     | VSS      | 116    | ODT0     | 184    | VSS      |
| 49     | VSS      | 117    | VDD      | 185    | VSS      | 50     | DQ22     | 118    | VDD      | 186    | /DQS7    |
| 51     | DQ18     | 119    | A13      | 187    | DM7      | 52     | DQ23     | 120    | ODT1     | 188    | DQS7     |
| 53     | DQ19     | 121    | /CS1     | 189    | VSS      | 54     | VSS      | 122    | NC       | 190    | VSS      |
| 55     | VSS      | 123    | VDD      | 191    | DQ58     | 56     | DQ28     | 124    | VDD      | 192    | DQ62     |
| 57     | DQ24     | 125    | TEST     | 193    | DQ59     | 58     | DQ29     | 126    | VREFCA   | 194    | DQ63     |
| 59     | DQ25     | 127    | VSS      | 195    | VSS      | 60     | VSS      | 128    | VSS      | 196    | VSS      |
| 61     | VSS      | 129    | DQ32     | 197    | SA0      | 62     | /DQS3    | 130    | DQ36     | 198    | /EVENT   |
| 63     | DM3      | 131    | DQ33     | 199    | VDDSPD   | 64     | DQS3     | 132    | DQ37     | 200    | SDA      |
| 65     | VSS      | 133    | VSS      | 201    | SA1      | 66     | VSS      | 134    | VSS      | 202    | SCL      |
| 67     | DQ26     | 135    | /DQS4    | 203    | Vtt      | 68     | DQ30     | 136    | DM4      | 204    | Vtt      |