

## KVR1333D3S8R9SL/1G

### 1GB 128M x 72-Bit PC3-10600

### CL9 Registered w/Parity 240-Pin DIMM

#### DESCRIPTION:

This document describes ValueRAM's 128M x 72-bit (1GB) DDR3-1333 CL9 SDRAM (Synchronous DRAM) registered w/parity, low-profile, single-rank memory module, based on nine 128M x 8-bit DDR3-1333 FBGA components. The SPD is programmed to JEDEC standard latency 1333Mhz timing of 9-9-9 at 1.5V. This 240-pin DIMM uses gold contact fingers and requires +1.5V. The electrical and mechanical specifications are as follows:

#### FEATURES:

- ✓ JEDEC standard 1.5V  $\pm$  0.075V Power Supply
- ✓ VDDQ = 1.5V  $\pm$  0.075V
- ✓ 667MHz fCK for 1333Mb/sec/pin
- ✓ 8 independent internal bank
- ✓ Programmable CAS Latency: 6,7,8,9,10
- ✓ Programmable Additive Latency: 0, CL - 2, or CL - 1 clock
- ✓ Programmable CAS Write Latency(CWL) = 7(DDR3-1333)
- ✓ 8-bit pre-fetch
- ✓ Burst Length: 8 (Interleave without any limit, sequential with starting address "000" only), 4 with tCCD = 4 which does not allow seamless read or write [either on the fly using A12 or MRS]
- ✓ Bi-directional Differential Data Strobe
- ✓ Internal(self) calibration : Internal self calibration through ZQ pin (RZQ : 240 ohm  $\pm$  1%)
- ✓ On Die Termination using ODT pin
- ✓ On-DIMM thermal sensor (Grade B)
- ✓ Average Refresh Period 7.8us at lower then TCASE 85°C, 3.9us at 85°C < TCASE . 95°C
- ✓ Asynchronous Reset
- ✓ PCB : Height 0.730" (18.75mm), double sided component

#### PERFORMANCE:

- |                                                    |                     |
|----------------------------------------------------|---------------------|
| ✓ CL(IDD)                                          | 9 cycles            |
| ✓ Row Cycle Time (tRCmin)                          | 49.5ns (min.)       |
| ✓ Refresh to Active/Refresh Command Time (tRFCmin) | 110ns (min.)        |
| ✓ Row Active Time (tRASmin)                        | 36ns (min.)         |
| ✓ Power                                            | 2.137 W (operating) |
| ✓ UL Rating                                        | 94 V - 0            |
| ✓ Operating Temperature                            | 0° C to 85° C       |
| ✓ Storage Temperature                              | -55° C to +100° C   |

