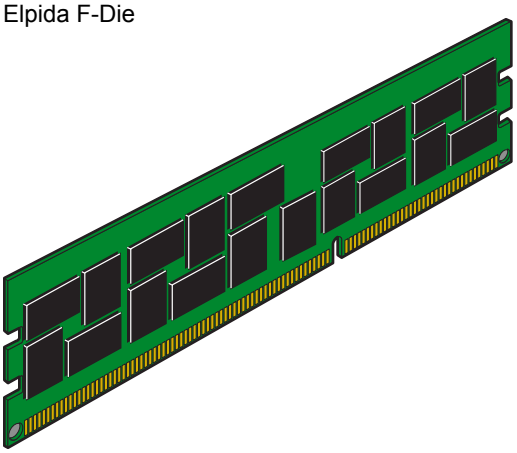
KVR1333D3D4R9S/4GEF

4GB 2Rx4 512M x 72-Bit DDR3-1333 Registered
w/ Parity CL9 240-Pin DIMM

DRAM SUPPORTED

Elpida F-Die



DESCRIPTION

This document describes ValueRAM's 512M x 72-bit (4GB) 2Rx4 DDR3-1333 Registered w/ Parity CL9 SDRAM (Synchronous DRAM) ECC memory module, based on thirty-six 256M x 4-bit DDR3-1333 FBGA components. The SPD is programmed to JEDEC standard latency DDR3-1333 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:

SPECIFICATIONS

CL(IDD)	9 cycles
Row Cycle Time (tRCmin)	49.5ns (min.)
Refresh to Active/Refresh Command Time (tRFCmin)	110ns
Row Active Time (tRASmin)	36ns (min.)
Power	3.960 W (operating per module)
UL Rating	94 V - 0
Operating Temperature	0° C to 85° C
Storage Temperature	-55° C to +100° C

FEATURES

- JEDEC standard 1.5V ± 0.075V Power Supply
- VDDQ = 1.5V ± 0.075V
- 667MHz fCK for 1333Mb/sec/pin
- 8 independent internal bank
- Programmable CAS Latency: 6,7,8,9
- Posted CAS
- 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 [eitheron the fly using A12 or MRS]
- Bi-directional Differential Data Strobe
- Internal(self) calibration : Internal self calibration through ZQ pin (RZQ : 240 ohm ± 1%)
- On Die Termination using ODT pin
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE ≤ 95°C
- Asynchronous Reset
- Thermal Sensor Grade B
- PCB : Height 1.18" (30.00mm) double-sided component
- RoHS Compliant

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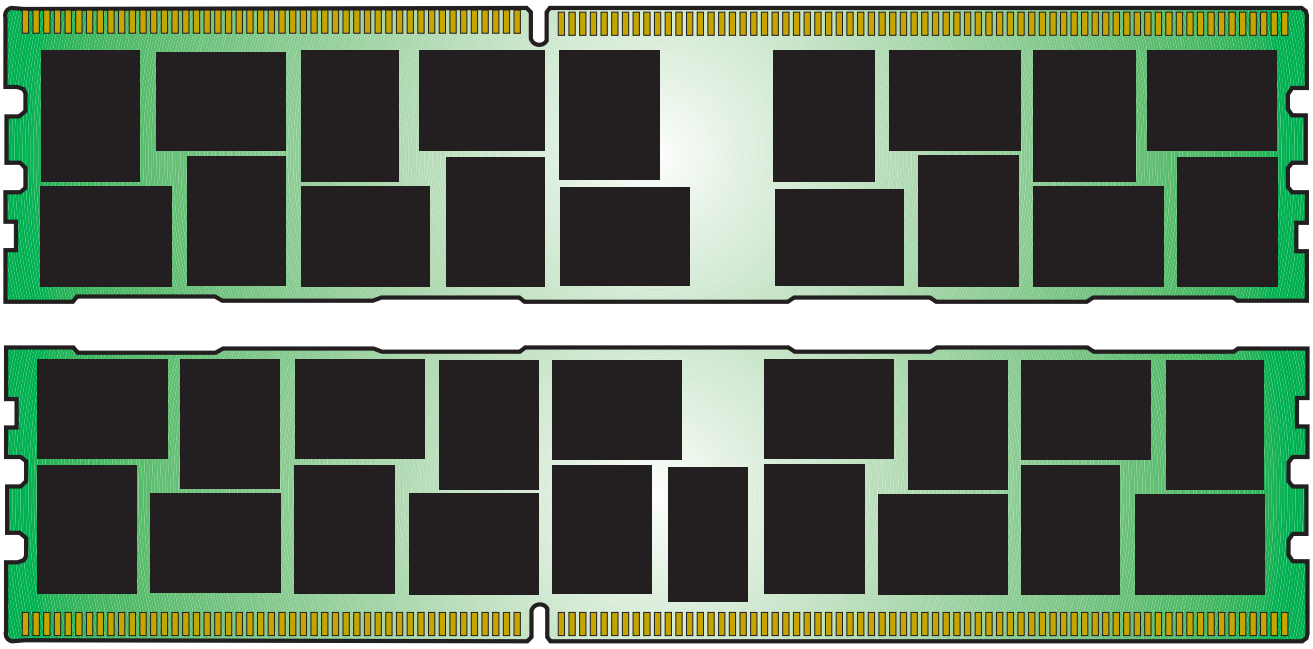
MODULE DIMENSIONS:



(Units = millimeters)