# Memory Module Specifications



### KVR29S21D8/32

32GB 2Rx8 4G x 64-Bit PC4-2933 CL21 260-Pin SODIMM

#### DESCRIPTION

This document describes ValueRAM's KVR29S21D8/32 is a 4G x 64-bit (32GB) DDR4-2933 CL21 SDRAM (Synchronous DRAM), 2Rx8, non-ECC, memory module, based on sixteen 2G x 8-bit FBGA components. The SPD is programmed to JEDEC standard latency DDR4-2933 timing of 21-21-21 at 1.2V. This 260-pin DIMM uses gold contact fingers. The electrical and mechanical specifications are as follows:

#### **FEATURES**

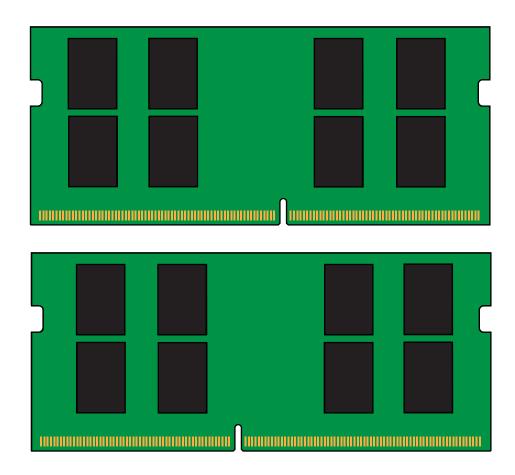
- Power Supply: VDD = 1.2V Typical
- VDDQ = 1.2V Typical
- VPP = 2.5V Typical
- VDDSPD = 2.2V to 3.6V
- Nominal and dynamic on-die termination (ODT) for data, strobe, and mask signals
- · Low-power auto self refresh (LPASR)
- · Data bus inversion (DBI) for data bus
- · On-die VREFDQ generation and calibration
- · Dual-rank
- On-board I2 serial presence-detect (SPD) EEPROM
- 16 internal banks; 4 groups of 4 banks each
- Fixed burst chop (BC) of 4 and burst length (BL) of 8 via the mode register set (MRS)
- Selectable BC4 or BL8 on-the-fly (OTF)
- Fly-by topology
- · Terminated control command and address bus
- PCB: Height 1.18" (30.00mm)
- · RoHS Compliant and Halogen-Free

#### **SPECIFICATIONS**

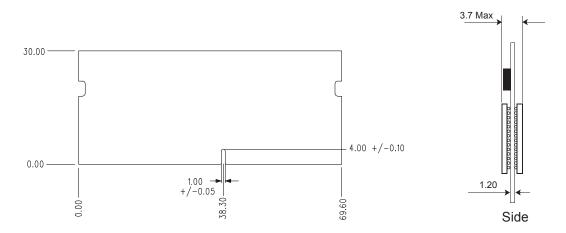
| CL(IDD)   | 21 cycles         |
|---|-------------------|
| Row Cycle Time (tRCmin)                             | 45.75ns(min.)     |
| Refresh to Active/Refresh<br>Command Time (tRFCmin) | 350ns(min.)       |
| Row Active Time (tRASmin)                           | 32ns(min.)        |
| UL Rating   | 94 V - 0          |
| Operating Temperature                               | 0° C to +85° C    |
| Storage Temperature                                 | -55° C to +100° C |
|   |                   |

Continued >>

## **MODULE DIMENSIONS**



All measurements are in millimeters. (Tolerances on all dimensions are ±0.12 unless otherwise specified)



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