

Memory Module Specifications

KSM32RS8L/8HDR

8GB 1Rx8 1G x 72-Bit PC4-3200

CL22 Registered w/Parity VLP 288-Pin DIMM

DESCRIPTION

Kingston's KSM32RS8L/8HDR is a 1G x 72-bit (8GB) DDR4-3200 CL22 SDRAM (Synchronous DRAM) registered w/ parity, 1Rx8, ECC, VLP (very low profile) memory module, based on nine 1G x 8-bit FBGA components. The SPD is programmed to JEDEC standard latency DDR4-3200 timing of 22-22-22 at 1.2V. Each 288-pin DIMM uses gold contact fingers. The electrical and mechanical specifications are as follows:

FEATURES

- Power Supply: VDD = 1.2V
- VDDQ = 1.2V
- VPP = 2.5V
- VDDSPD = 2.41V to 2.75V
- Functionality and operations comply with the DDR4 SDRAM datasheet
- 16 internal banks
- Bank Grouping is applied, and CAS to CAS latency (tCCD_L, tCCD_S) for the banks in the same or different bank group accesses are available
- Data transfer rates: PC4-3200, PC4-2933, PC4-2666, PC4-2400, PC4-2133, PC4-1866, PC4-1600
- Bi-Directional Differential Data Strobe
- 8 bit pre-fetch
- Burst Length (BL) switch on-the-fly BL8 or BC4(Burst Chop)
- Supports ECC error correction and detection
- On-Die Termination (ODT)
- Temperature sensor with integrated SPD
- This product is in compliance with the RoHS directive.
- Per DRAM Addressability is supported
- Internal Vref DQ level generation is available
- Write CRC is supported at all speed grades
- CA parity (Command/Address Parity) mode is supported

SPECIFICATIONS

| | |
|--------------------------------------------------|-------------------|
| CL(IDD) | 22 cycles |
| Row Cycle Time (tRCmin) | 45.75ns(min.) |
| Refresh to Active/Refresh Command Time (tRFCmin) | 350ns(min.) |
| Row Active Time (tRASmin) | 32ns(min.) |
| Maximum Operating Power | * |
| UL Rating | 94 V - 0 |
| Operating Temperature | 0° C to +85° C |
| Storage Temperature | -55° C to +100° C |

*See IDD Specifications (page 2)

Module Assembly

DRAM: HYNIX (D-DIE)

RCD: Rambus

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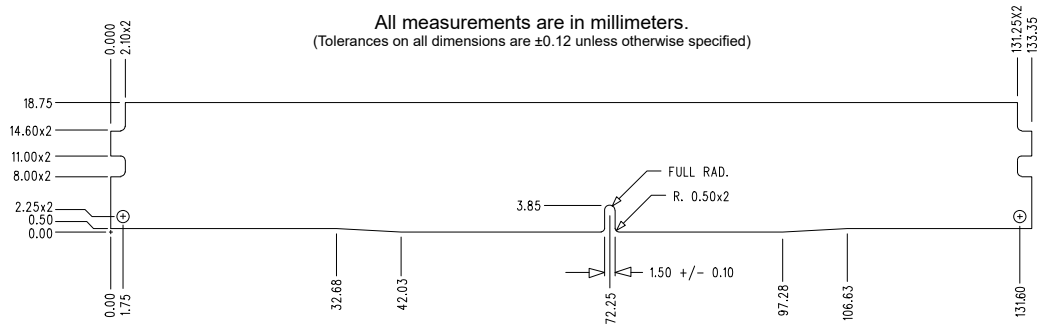
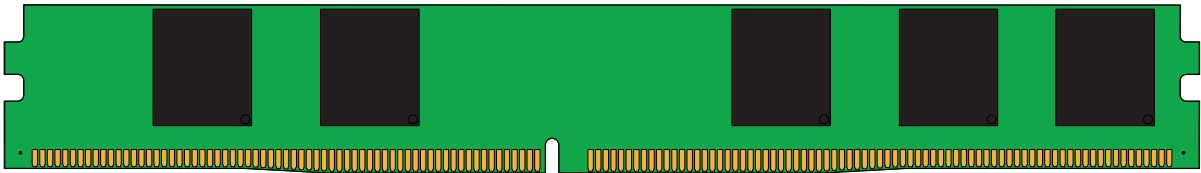
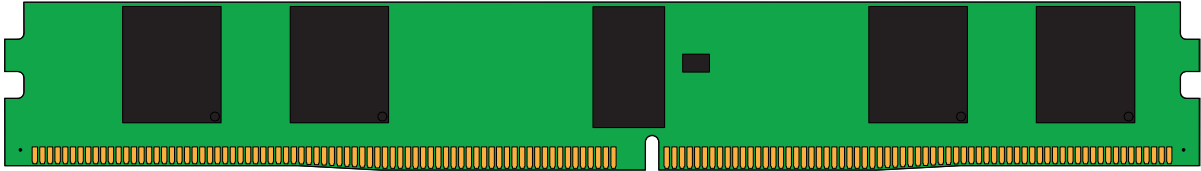
IDD Specifications

| IDD | | unit |
|--------|------|------|
| Symbol | 3200 | |
| IDD0 | 787 | mA |
| IDD0A | 787 | mA |
| IDD1 | 893 | mA |
| IDD1A | 919 | mA |
| IDD2N | 714 | mA |
| IDD2NA | 714 | mA |
| IDD2NT | 759 | mA |
| IDD2NL | 651 | mA |
| IDD2NG | 714 | mA |
| IDD2ND | 705 | mA |
| IDD2NP | 714 | mA |
| IDD2P | 478 | mA |
| IDD2Q | 669 | mA |
| IDD3N | 744 | mA |
| IDD3NA | 744 | mA |
| IDD3P | 512 | mA |
| IDD4R | 1558 | mA |
| IDD4RA | 1586 | mA |
| IDD4RB | 1575 | mA |
| IDD4W | 1544 | mA |
| IDD4WA | 1592 | mA |
| IDD4WB | 1487 | mA |
| IDD4WC | 1537 | mA |
| IDD4WP | 1752 | mA |
| IDD5B | 2235 | mA |
| IDD5F2 | 1751 | mA |
| IDD5F4 | 1600 | mA |
| IDD6N | 175 | mA |
| IDD6E | 239 | mA |
| IDD6R | 115 | mA |
| IDD6A | 239 | mA |
| IDD7 | 1702 | mA |
| IDD8 | 92 | mA |

| IPP | | unit |
|--------|------|------|
| Symbol | 3200 | |
| IPP0 | 36 | mA |
| IPP1 | 40 | mA |
| IPP2N | 21 | mA |
| IPP2P | 17 | mA |
| IPP3N | 100 | mA |
| IPP3P | 98 | mA |
| IPP4R | 129 | mA |
| IPP4W | 128 | mA |
| IPP5B | 489 | mA |
| IPP5F2 | 324 | mA |
| IPP5F4 | 265 | mA |
| IPP6N | 37 | mA |
| IPP6E | 52 | mA |
| IPP6R | 25 | mA |
| IPP6A | 51 | mA |
| IPP7 | 142 | mA |
| IPP8 | 18 | mA |

continued

MODULE DIMENSIONS



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