

Memory Module Specifications

KSM32RS4L/32MFR

32GB 1Rx4 4G x 72-Bit PC4-3200

CL22 Registered w/Parity VLP 288-Pin DIMM

DESCRIPTION

Kingston's KSM32RS4L/32MFR is a 4G x 72-bit (32GB) DDR4-3200 CL22 SDRAM (Synchronous DRAM) registered w/ parity, 1Rx4, ECC, VLP (very low profile) memory module, based on eighteen 4G x 4-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)	22cycles
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: MICRON (F-DIE)

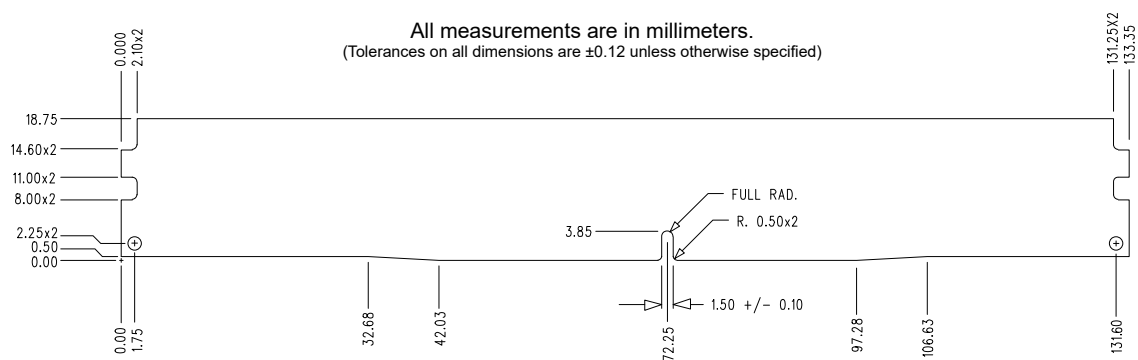
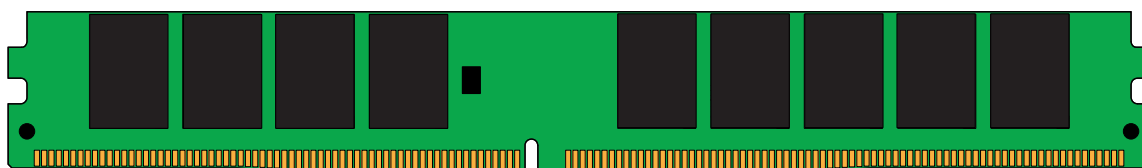
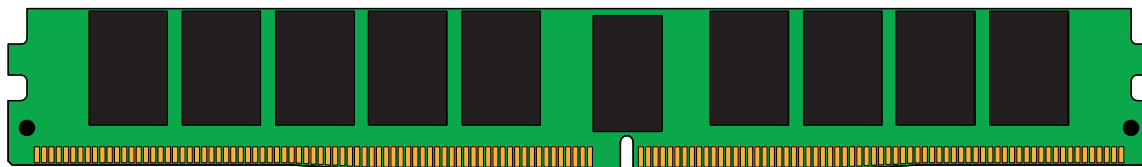
RCD: Rambus

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IDD Specifications

Symbol	3200	Units
I _{DD0}	990	mA
I _{PP0}	54	mA
I _{DD1}	1188	mA
I _{DD2N}	810	mA
I _{DD2NT}	918	mA
I _{DD2P}	684	mA
I _{DD2Q}	756	mA
I _{DD3N}	1080	mA
I _{PP3N}	36	mA
I _{DD3P}	864	mA
I _{DD4R}	2286	mA
I _{DD4W}	1728	mA
I _{DD5R}	1224	mA
I _{PP5R}	72	mA
I _{DD6N}	954	mA
I _{DD6E}	1620	mA
I _{DD6R}	360	mA
I _{DD6A}	198	mA
I _{DD6A}	360	mA
I _{DD6A}	918	mA
I _{DD6A}	1620	mA
I _{PP6X}	108	mA
I _{DD7}	4860	mA
I _{PP7}	198	mA
I _{DD8}	648	mA

MODULE DIMENSIONS



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