

## Memory Module Specifications

### KSM32RD4/32HDR

32GB 2Rx4 4G x 72-Bit PC4-3200

CL22 Registered w/Parity 288-Pin DIMM

#### DESCRIPTION

Kingston's KSM32RD4/32HDR is a 4G x 72-bit (32GB) DDR4-3200 CL22 SDRAM (Synchronous DRAM) registered w/ parity, 2Rx4, ECC, memory module, based on thirty-six 2G 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 Table (page2)

#### Module Assembly

**DRAM:** HYNIX (D-DIE)

**RCD:** Rambus

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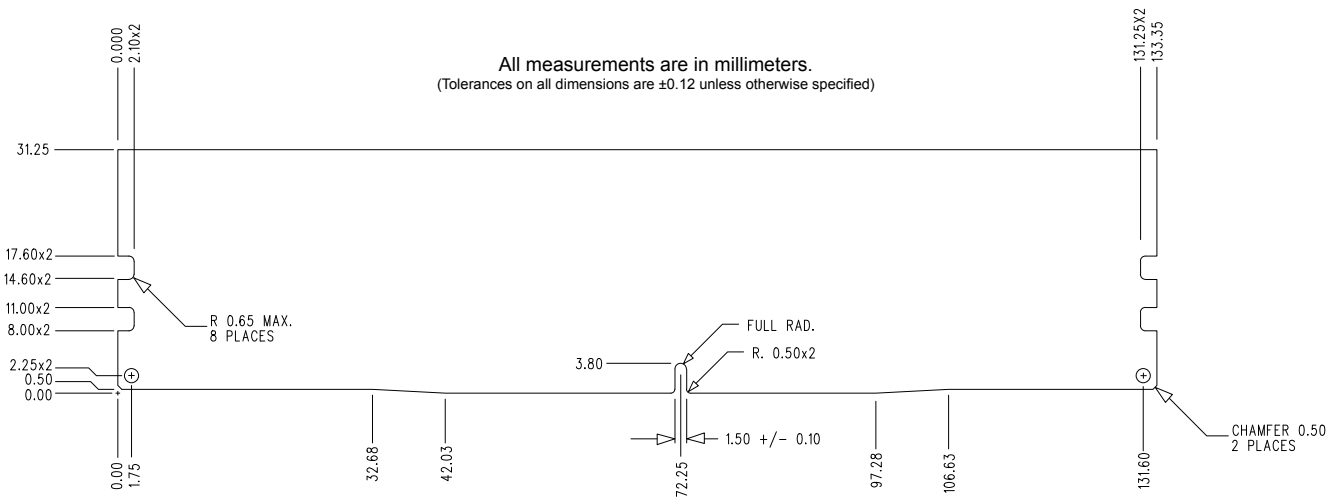
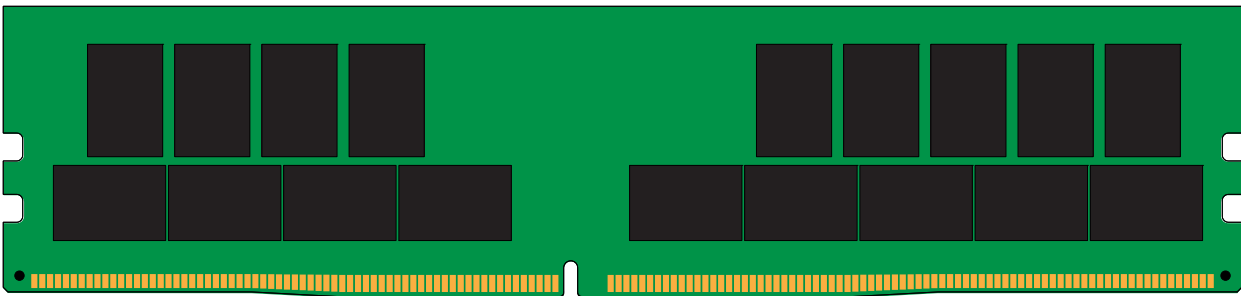
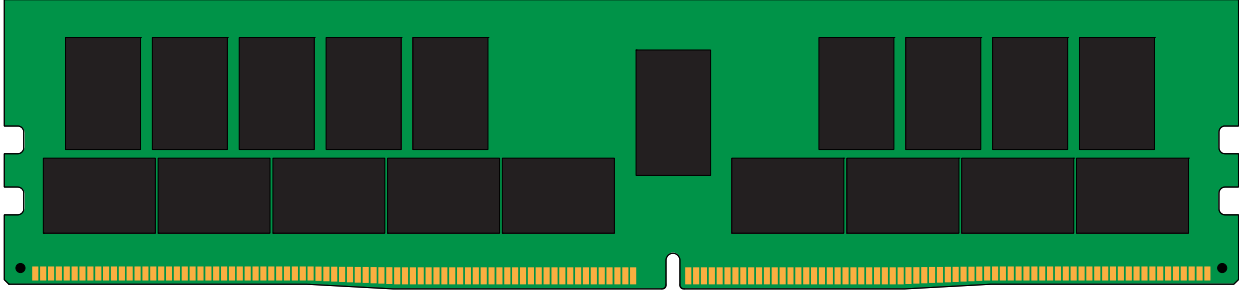
## IDD Specifications

IDD		unit
Symbol	3200	
IDD0	1548	mA
IDD0A	1549	mA
IDD1	1708	mA
IDD1A	1777	mA
IDD2N	1431	mA
IDD2NA	1431	mA
IDD2NT	1609	mA
IDD2NL	1161	mA
IDD2NG	1422	mA
IDD2ND	1385	mA
IDD2NP	1450	mA
IDD2P	925	mA
IDD2Q	1296	mA
IDD3N	1494	mA
IDD3NA	1490	mA
IDD3P	1062	mA
IDD4R	2680	mA
IDD4RA	2733	mA
IDD4RB	2691	mA
IDD4W	2702	mA
IDD4WA	2797	mA
IDD4WB	2520	mA
IDD4WC	2704	mA
IDD4WP	3074	mA
IDD5B	4464	mA
IDD5F2	3476	mA
IDD5F4	3173	mA
IDD6N	624	mA
IDD6E	882	mA
IDD6R	384	mA
IDD6A	882	mA
IDD7	4544	mA
IDD8	290	mA

IPP		unit
Symbol	3200	
IPP0	112	mA
IPP1	121	mA
IPP2N	84	mA
IPP2P	67	mA
IPP3N	398	mA
IPP3P	384	mA
IPP4R	300	mA
IPP4W	297	mA
IPP5B	1014	mA
IPP5F2	687	mA
IPP5F4	570	mA
IPP6N	146	mA
IPP6E	207	mA
IPP6R	99	mA
IPP6A	204	mA
IPP7	562	mA
IPP8	70	mA

continued

## MODULE DIMENSIONS



The product images shown are for illustration purposes only and may not be an exact representation of the product.  
Kingston reserves the right to change any information at anytime without notice.