

## Memory Module Specifications

### KSM32RD8/16HDR

16GB 2Rx8 2G x 72-Bit PC4-3200

CL22 Registered w/Parity 288-Pin DIMM

#### DESCRIPTION

Kingston's KSM32RD8/16HDR is a 2G x 72-bit (16GB) DDR4-3200 CL22 SDRAM (Synchronous DRAM) registered w/ parity, 2Rx8, ECC, memory module, based on eighteen 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 Table (page2)

#### Module Assembly

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

**RCD:** Rambus

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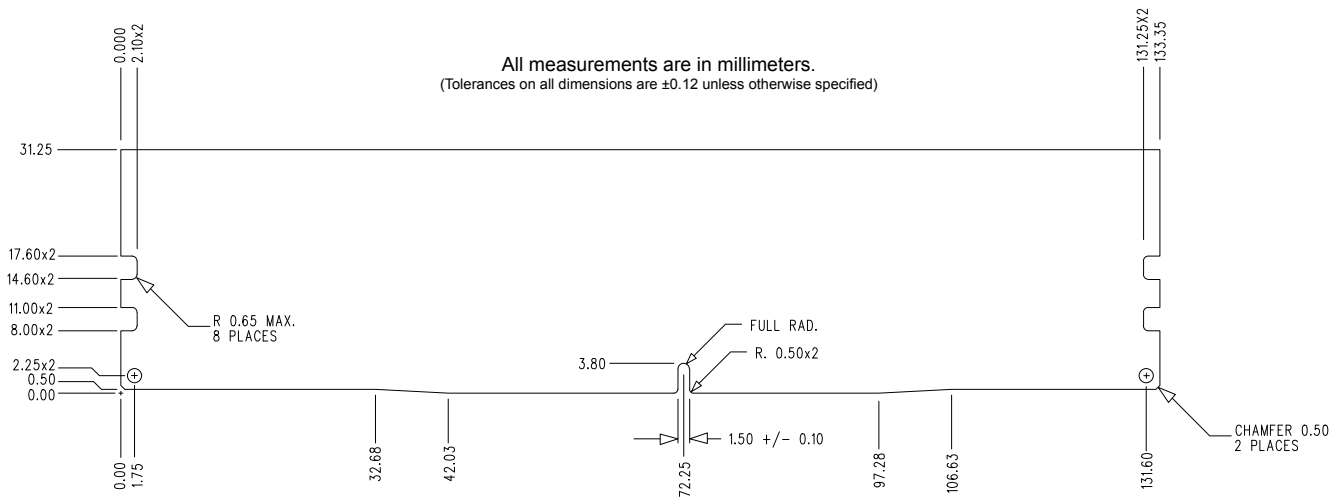
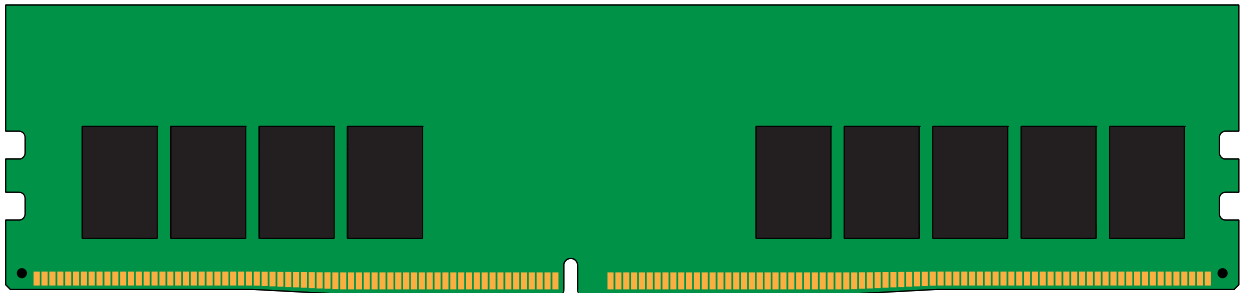
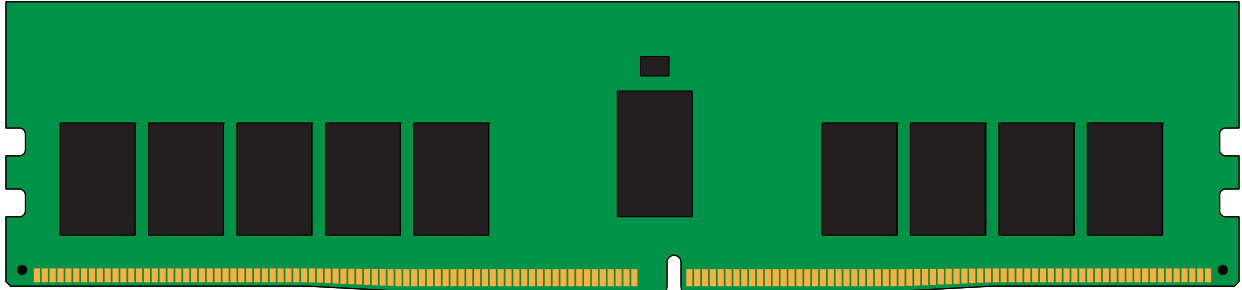
## IDD Specifications

IDD		unit
Symbol	3200	
IDD0	1019	mA
IDD0A	1019	mA
IDD1	1125	mA
IDD1A	1151	mA
IDD2N	960	mA
IDD2NA	961	mA
IDD2NT	1052	mA
IDD2NL	826	mA
IDD2NG	957	mA
IDD2ND	938	mA
IDD2NP	970	mA
IDD2P	626	mA
IDD2Q	893	mA
IDD3N	992	mA
IDD3NA	992	mA
IDD3P	693	mA
IDD4R	1787	mA
IDD4RA	1814	mA
IDD4RB	1803	mA
IDD4W	1775	mA
IDD4WA	1823	mA
IDD4WB	1717	mA
IDD4WC	1767	mA
IDD4WP	1982	mA
IDD5B	2475	mA
IDD5F2	1982	mA
IDD5F4	1830	mA
IDD6N	322	mA
IDD6E	451	mA
IDD6R	203	mA
IDD6A	451	mA
IDD7	1930	mA
IDD8	157	mA

IPP		unit
Symbol	3200	
IPP0	56	mA
IPP1	60	mA
IPP2N	41	mA
IPP2P	33	mA
IPP3N	197	mA
IPP3P	193	mA
IPP4R	149	mA
IPP4W	147	mA
IPP5B	507	mA
IPP5F2	344	mA
IPP5F4	285	mA
IPP6N	73	mA
IPP6E	104	mA
IPP6R	50	mA
IPP6A	102	mA
IPP7	161	mA
IPP8	35	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.