

# Memory Module Specifications

## KSM32RS8/16HCR

16GB 1Rx8 2G x 72-Bit PC4-3200

CL22 Registered w/Parity 288-Pin DIMM

### DESCRIPTION

Kingston's KSM32RS8/16HCR is a 2G x 72-bit (16GB) DDR4-3200 CL22 SDRAM (Synchronous DRAM) registered w/ parity, 1Rx8, ECC, memory module, based on nine 2G 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

<b>DRAM:</b> HYNIX (C-DIE)
<b>RCD:</b> Rambus

## IDD Specifications

IDD		unit
Symbol	3200	
IDD0	814	mA
IDD0A	815	mA
IDD1	920	mA
IDD1A	952	mA
IDD2N	726	mA
IDD2NA	726	mA
IDD2NT	768	mA
IDD2NL	652	mA
IDD2NG	725	mA
IDD2ND	709	mA
IDD2NP	733	mA
IDD2P	474	mA
IDD2Q	701	mA
IDD3N	860	mA
IDD3NA	860	mA
IDD3P	854	mA
IDD4R	1637	mA
IDD4RA	1655	mA
IDD4RB	1648	mA
IDD4W	1594	mA
IDD4WA	1637	mA
IDD4WB	1524	mA
IDD4WC	1587	mA
IDD4WP	1818	mA
IDD5B	5212	mA
IDD5F2	3737	mA
IDD5F4	3177	mA
IDD6N	326	mA
IDD6E	548	mA
IDD6R	139	mA
IDD6A	560	mA
IDD7	1821	mA
IDD8	98	mA

IPP		unit
Symbol	3200	
IPP0	29	mA
IPP1	33	mA
IPP2N	16	mA
IPP2P	16	mA
IPP3N	19	mA
IPP3P	19	mA
IPP4R	53	mA
IPP4W	53	mA
IPP5B	491	mA
IPP5F2	323	mA
IPP5F4	269	mA
IPP6N	65	mA
IPP6E	115	mA
IPP6R	28	mA
IPP6A	101	mA
IPP7	139	mA
IPP8	16	mA