

# Memory Module Specifications

## KSM32LQ4/128HC

128GB 4Rx4 16G x 72-Bit PC4-3200

CL22 Load Reduced 288-Pin DIMM

### DESCRIPTION

Kingston's KSM32LQ4/128HC is a 16G x 72-bit (128GB) DDR4-3200 CL22 SDRAM (Synchronous DRAM), Load Reduced, 4Rx4, ECC, memory module, based on thirty-six 8G 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 = 2.25V to 2.75V
- Functionality and operations comply with the DDR4 SDRAM/3DS 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
- 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.
- MBIST PPR 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

<b>DRAM:</b> Hynix (C-DIE)
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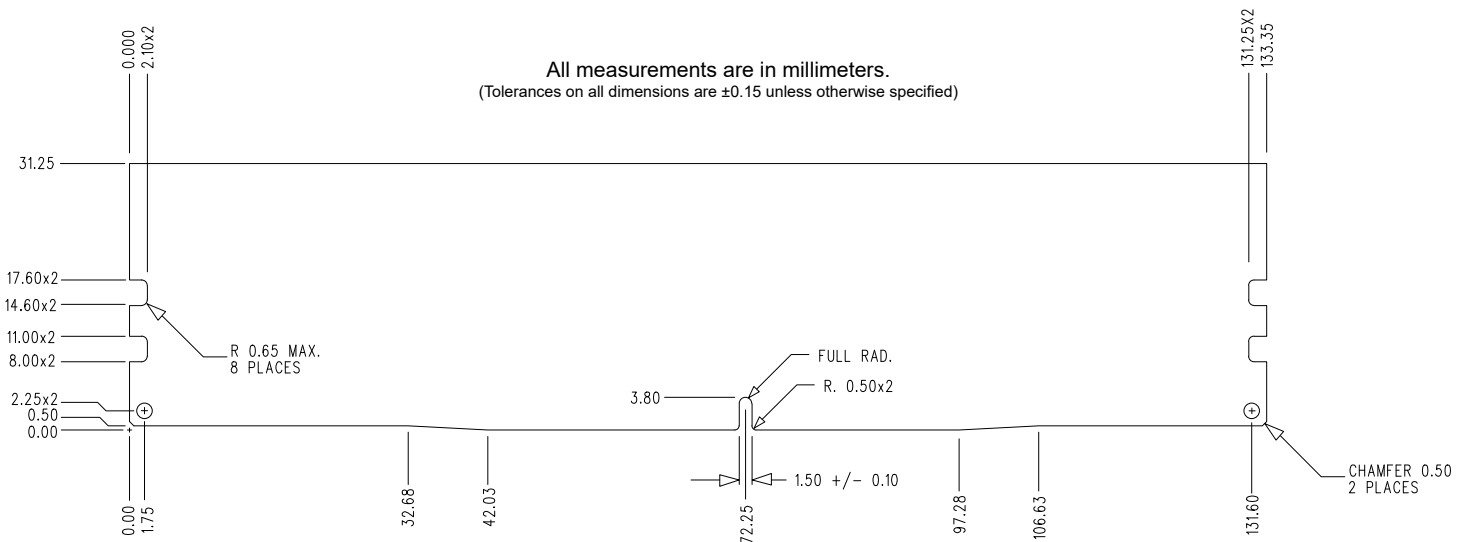
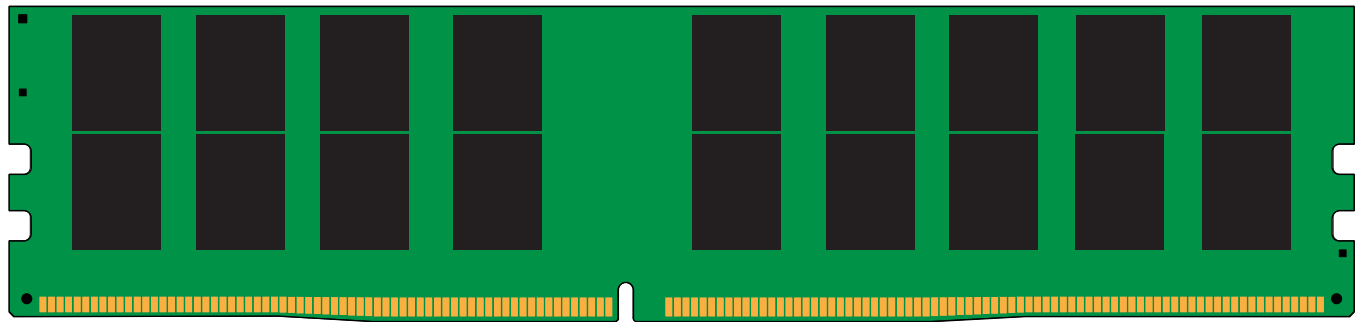
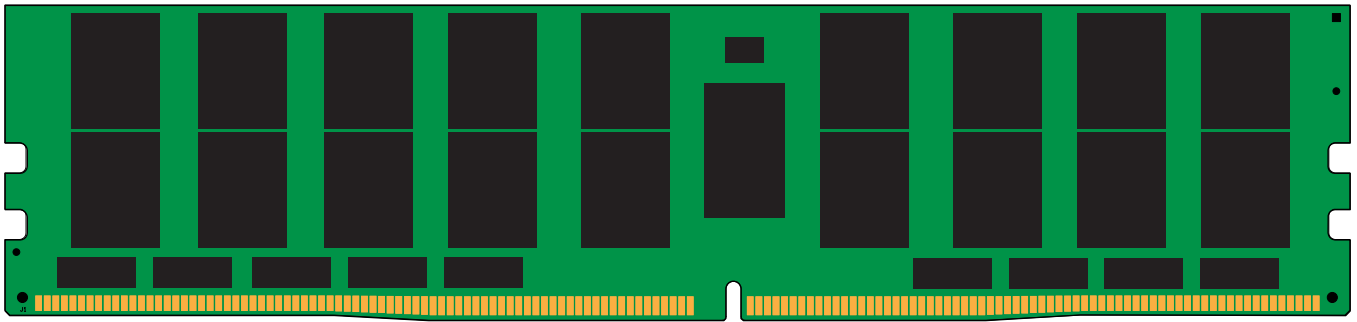
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## IDD Specifications

IDD		unit
Symbol	3200	
IDD0	3627	mA
IDD0A	3628	mA
IDD1	3801	mA
IDD1A	3877	mA
IDD2N	3564	mA
IDD2NA	3565	mA
IDD2NT	3882	mA
IDD2NL	2956	mA
IDD2NG	3548	mA
IDD2ND	3420	mA
IDD2NP	3674	mA
IDD2P	2699	mA
IDD2Q	3412	mA
IDD3N	4099	mA
IDD3NA	4244	mA
IDD3P	3315	mA
IDD4R	4665	mA
IDD4RA	4714	mA
IDD4RB	4665	mA
IDD4W	4719	mA
IDD4WA	4805	mA
IDD4WB	4611	mA
IDD4WC	4734	mA
IDD4WP	5183	mA
IDD5B	12016	mA
IDD5F2	9207	mA
IDD5F4	8159	mA
IDD6N	2484	mA
IDD6E	4184	mA
IDD6R	1180	mA
IDD6A	4184	mA
IDD7	6237	mA
IDD8	727	mA
IDD9	7892	mA

IPP		unit
Symbol	3200	
IPP0	122	mA
IPP1	123	mA
IPP2N	95	mA
IPP2P	95	mA
IPP3N	112	mA
IPP3P	112	mA
IPP4R	137	mA
IPP4W	137	mA
IPP5B	1046	mA
IPP5F2	744	mA
IPP5F4	662	mA
IPP6N	290	mA
IPP6E	481	mA
IPP6R	154	mA
IPP6A	428	mA
IPP7	496	mA
IPP8	95	mA
IPP9	635	mA

## 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.

Revision No.	History	Release Date	Remark	Editor	Approved
A	Initial Release	03/19/24		David Y.	Henry N.
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