

# Memory Module Specifications

## KSM29LQ4/64HCM

64GB 4Rx4 8G x 72-Bit PC4-2933

CL21 Load Reduced w/Parity 288-Pin DIMM

### DESCRIPTION

Kingston's KSM29LQ4/64HCM is a 8G x 72-bit (64GB) DDR4-2933 CL21 SDRAM (Synchronous DRAM) load reduced w/ parity, 4Rx4, ECC, memory module, based on thirty-six 4G x 4-bit DDP FBGA components. The SPD is programmed to JEDEC standard latency DDR4-2933 timing of 21-21-21 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: PC4-2933, 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)	21 cycles
Row Cycle Time (tRCmin)	46.32ns(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 (page 2)

### Module Assembly

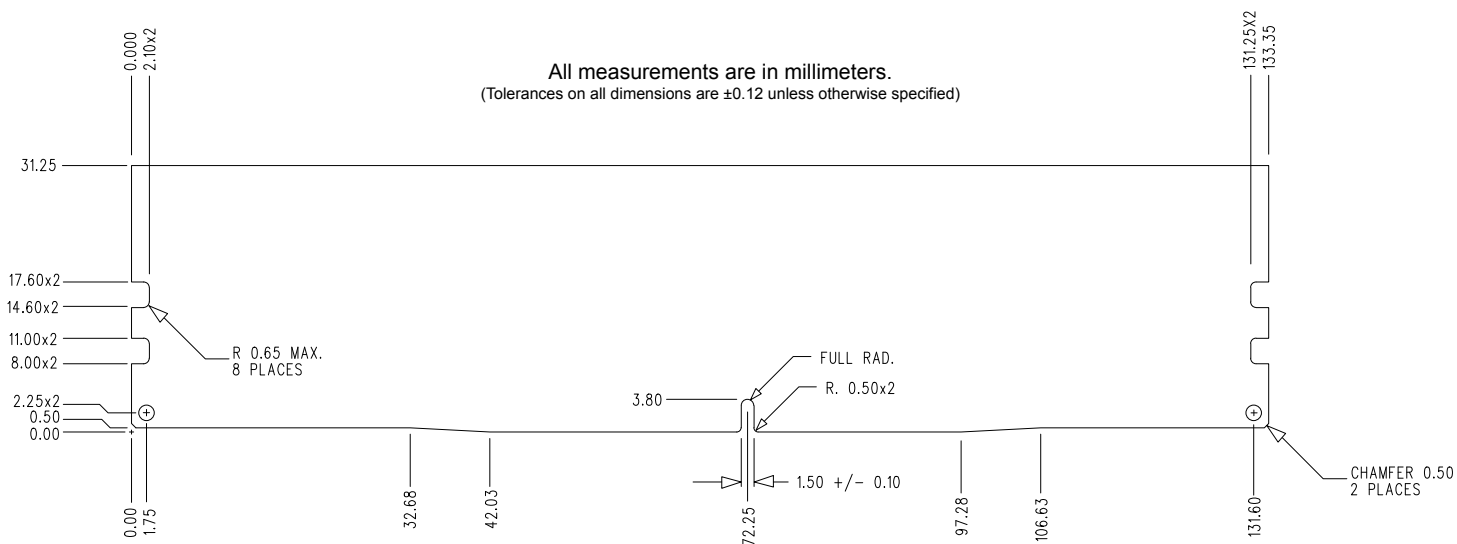
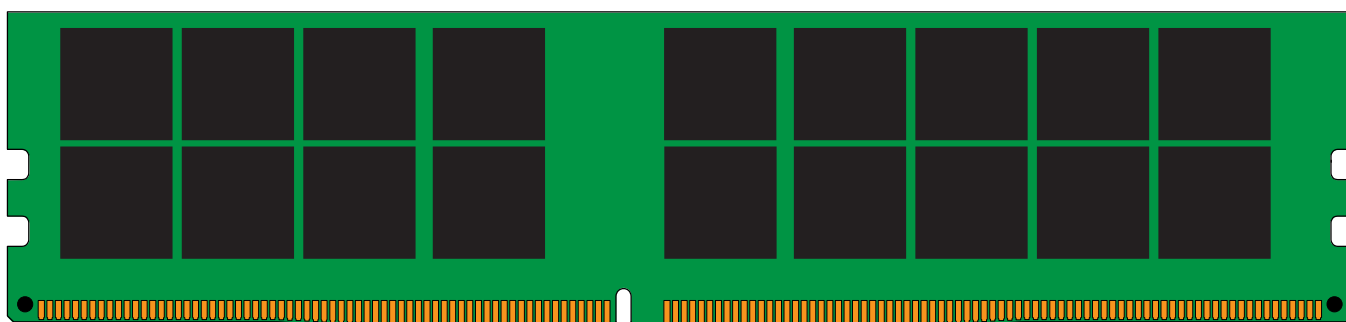
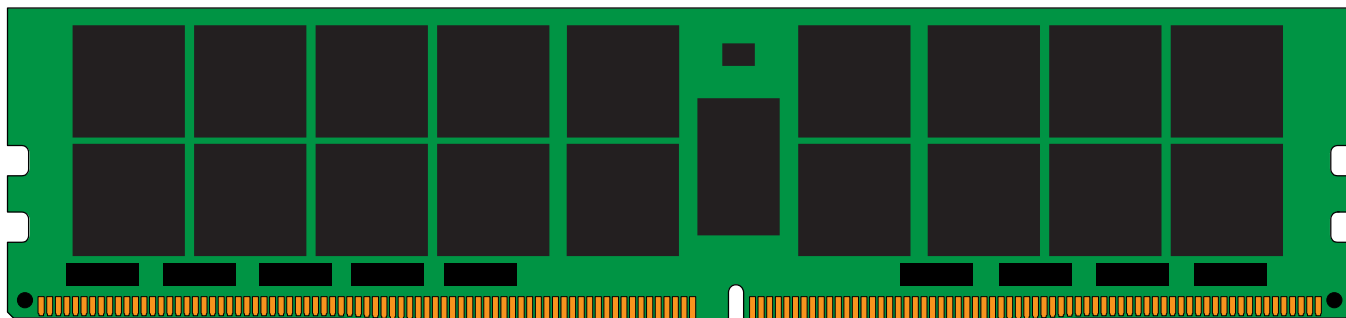
<b>DRAM:</b> HYNIX (C-DIE)
<b>RCD:</b> Montage

## IDD Specifications

IDD		unit
Symbol	2933	
IDD0	4262	mA
IDD0A	4280	mA
IDD1	2894	mA
IDD1A	2876	mA
IDD2N	4082	mA
IDD2NA	4082	mA
IDD2NT	4442	mA
IDD2NL	3578	mA
IDD2NG	4082	mA
IDD2ND	4010	mA
IDD2NP	4082	mA
IDD2P	3329	mA
IDD2Q	3794	mA
IDD3N	4874	mA
IDD3NA	4874	mA
IDD3P	4121	mA
IDD4R	3963	mA
IDD4RA	4017	mA
IDD4RB	3981	mA
IDD4W	3873	mA
IDD4WA	3963	mA
IDD4WB	3657	mA
IDD4WC	3891	mA
IDD4WP	4215	mA
IDD5B	7628	mA
IDD5F2	6656	mA
IDD5F4	6296	mA
IDD6N	2107	mA
IDD6E	2611	mA
IDD6R	1387	mA
IDD6A	2611	mA
IDD7	5835	mA
IDD8	1171	mA

IPP		unit
Symbol	2933	
IPP0	272	mA
IPP1	290	mA
IPP2N	230	mA
IPP2P	230	mA
IPP3N	1152	mA
IPP3P	1152	mA
IPP4R	515	mA
IPP4W	515	mA
IPP5B	1523	mA
IPP5F2	1091	mA
IPP5F4	929	mA
IPP6N	418	mA
IPP6E	562	mA
IPP6R	338	mA
IPP6A	562	mA
IPP7	677	mA
IPP8	230	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.