

# Memory Module Specifications

## KSM32ED8/16HD

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

CL22 288-Pin DIMM

### DESCRIPTION

Kingston's KSM32ED8/16HD is a 2G x 72-bit (16GB) DDR4-3200 CL22 SDRAM (Synchronous DRAM), 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 Typical
- VDDQ = 1.2V Typical
- VPP = 2.5V Typical
- VDDSPD = 2.2V to 3.6V
- Nominal and dynamic on-die termination (ODT) for data, strobe, and mask signals
- Low-power auto self refresh (LPASR)
- Data bus inversion (DBI) for data bus
- On-die VREFDQ generation and calibration
- Dual-rank
- On-board I2 serial presence-detect (SPD) EEPROM
- Temperature sensor with integrated SPD
- 16 internal banks; 4 groups of 4 banks each
- Fixed burst chop (BC) of 4 and burst length (BL) of 8 via the mode register set (MRS)
- Selectable BC4 or BL8 on-the-fly (OTF)
- Fly-by topology
- Terminated control command and address bus
- PCB: Height 1.23" (31.25mm)
- RoHS Compliant and Halogen-Free

### 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: HYNIX (D-DIE)</b>
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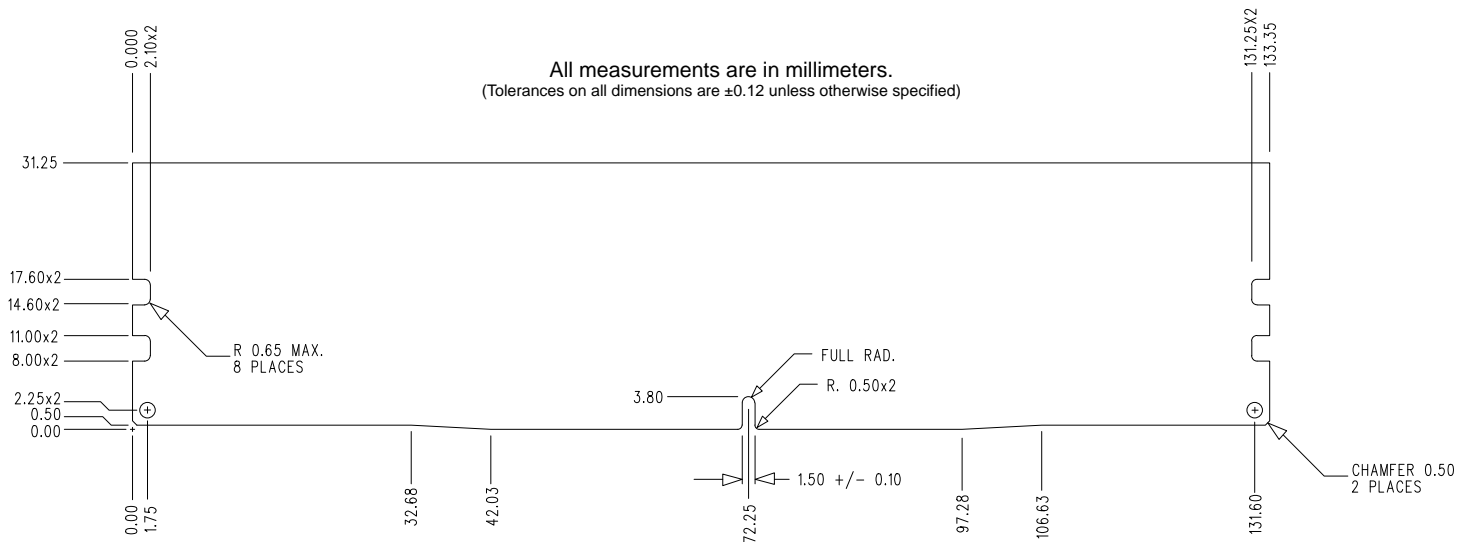
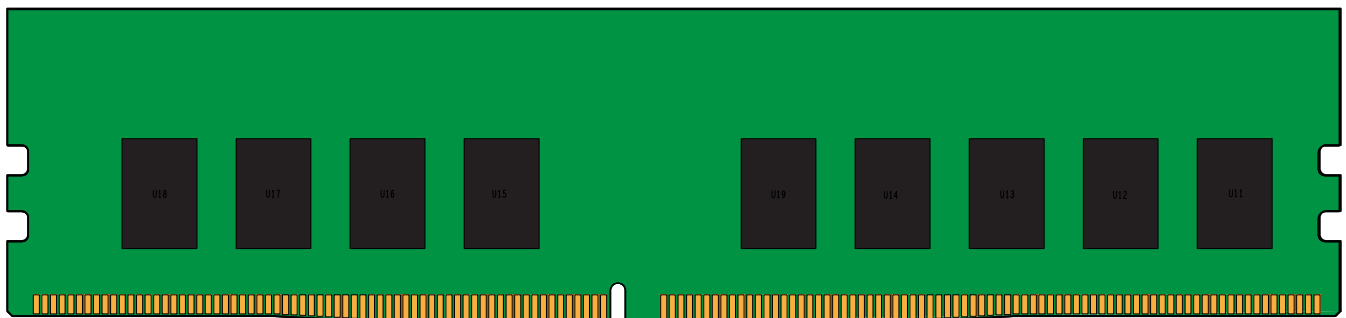
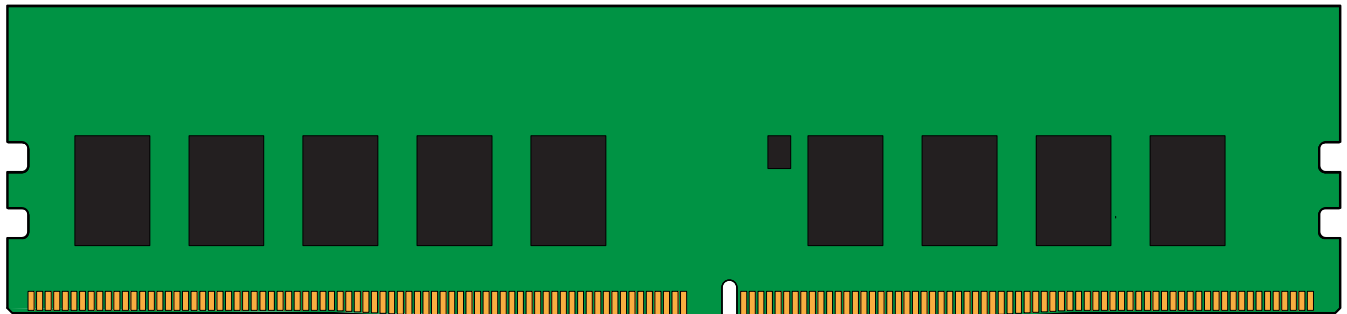
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## IDD Specifications

IDD		unit
Symbol	3200	
IDD0	560	mA
IDD0A	561	mA
IDD1	629	mA
IDD1A	657	mA
IDD2N	502	mA
IDD2NA	504	mA
IDD2NT	590	mA
IDD2NL	348	mA
IDD2NG	499	mA
IDD2ND	480	mA
IDD2NP	507	mA
IDD2P	335	mA
IDD2Q	427	mA
IDD3N	536	mA
IDD3NA	536	mA
IDD3P	407	mA
IDD4R	1294	mA
IDD4RA	1323	mA
IDD4RB	1310	mA
IDD4W	1277	mA
IDD4WA	1323	mA
IDD4WB	1196	mA
IDD4WC	1250	mA
IDD4WP	1473	mA
IDD5B	2000	mA
IDD5F2	1512	mA
IDD5F4	1366	mA
IDD6N	338	mA
IDD6E	466	mA
IDD6R	218	mA
IDD6A	466	mA
IDD7	1434	mA
IDD8	176	mA

IPP		unit
Symbol	3200	
IPP0	76	mA
IPP1	84	mA
IPP2N	61	mA
IPP2P	56	mA
IPP3N	243	mA
IPP3P	241	mA
IPP4R	181	mA
IPP4W	180	mA
IPP5B	503	mA
IPP5F2	339	mA
IPP5F4	297	mA
IPP6N	93	mA
IPP6E	125	mA
IPP6R	74	mA
IPP6A	125	mA
IPP7	175	mA
IPP8	59	mA

# MODULE DIMENSIONS



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