

Memory Module Specifications

KSM32ES8/8HD

8GB 1Rx8 1G x 72-Bit PC4-3200

CL22 288-Pin DIMM

DESCRIPTION

Kingston's KSM32ES8/8HD is a 1G x 72-bit (8GB) DDR4-3200 CL22 SDRAM (Synchronous DRAM), 1Rx8, ECC, memory module, based on nine 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
- Single-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

DRAM: HYNIX (D-DIE)

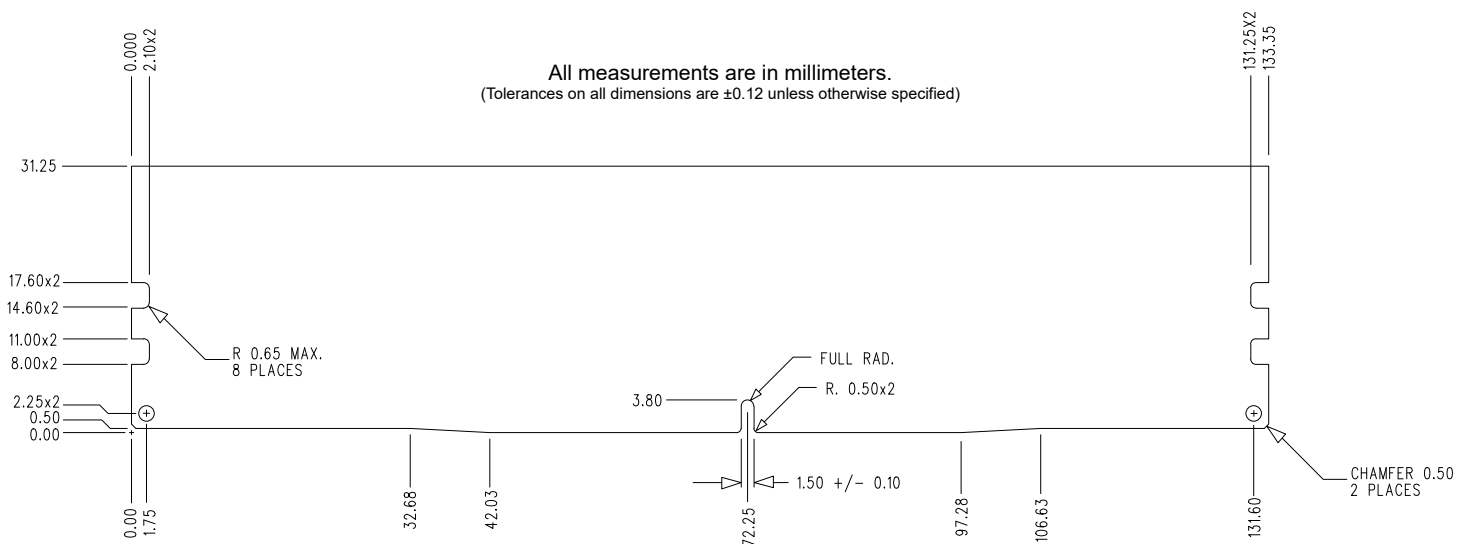
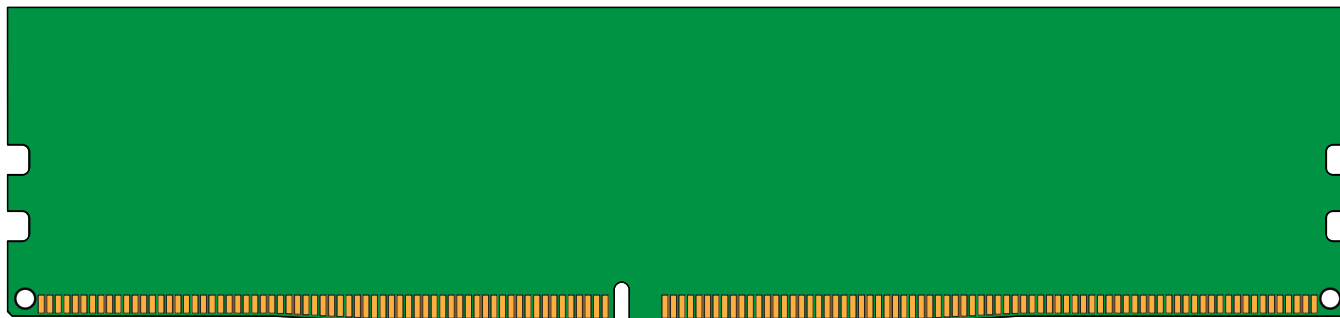
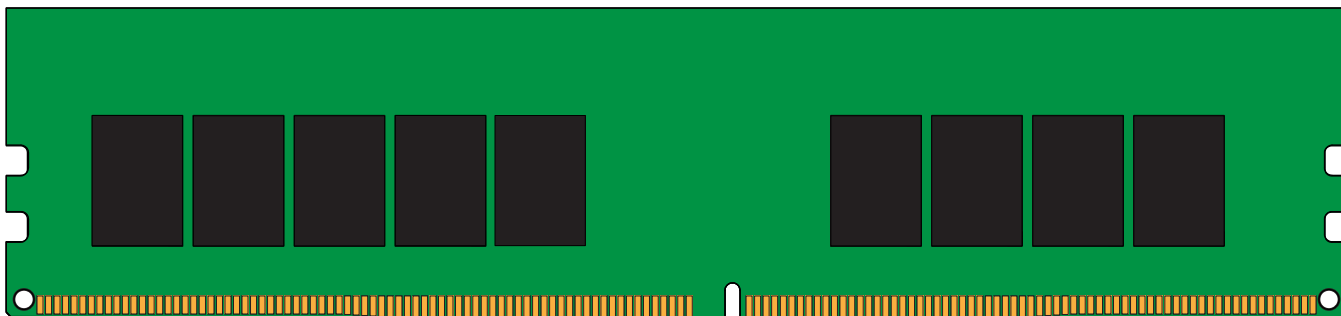
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IDD Specifications

IDD		unit
Symbol	3200	
IDD0	309	mA
IDD0A	309	mA
IDD1	378	mA
IDD1A	405	mA
IDD2N	251	mA
IDD2NA	252	mA
IDD2NT	295	mA
IDD2NL	174	mA
IDD2NG	250	mA
IDD2ND	240	mA
IDD2NP	253	mA
IDD2P	168	mA
IDD2Q	214	mA
IDD3N	268	mA
IDD3NA	268	mA
IDD3P	203	mA
IDD4R	1043	mA
IDD4RA	1071	mA
IDD4RB	1059	mA
IDD4W	1026	mA
IDD4WA	1071	mA
IDD4WB	946	mA
IDD4WC	999	mA
IDD4WP	1222	mA
IDD5B	1749	mA
IDD5F2	1261	mA
IDD5F4	1115	mA
IDD6N	169	mA
IDD6E	233	mA
IDD6R	109	mA
IDD6A	233	mA
IDD7	1183	mA
IDD8	88	mA

IPP		unit
Symbol	3200	
IPP0	46	mA
IPP1	53	mA
IPP2N	31	mA
IPP2P	28	mA
IPP3N	122	mA
IPP3P	120	mA
IPP4R	151	mA
IPP4W	149	mA
IPP5B	473	mA
IPP5F2	309	mA
IPP5F4	266	mA
IPP6N	46	mA
IPP6E	62	mA
IPP6R	37	mA
IPP6A	62	mA
IPP7	144	mA
IPP8	29	mA

MODULE DIMENSIONS



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