

Memory Module Specifications

KSM32ES8/16ME

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

CL22 288-Pin DIMM

DESCRIPTION

Kingston's KSM32ES8/16ME is a 2G x 72-bit (16GB) DDR4-3200 CL22 SDRAM (Synchronous DRAM), 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 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

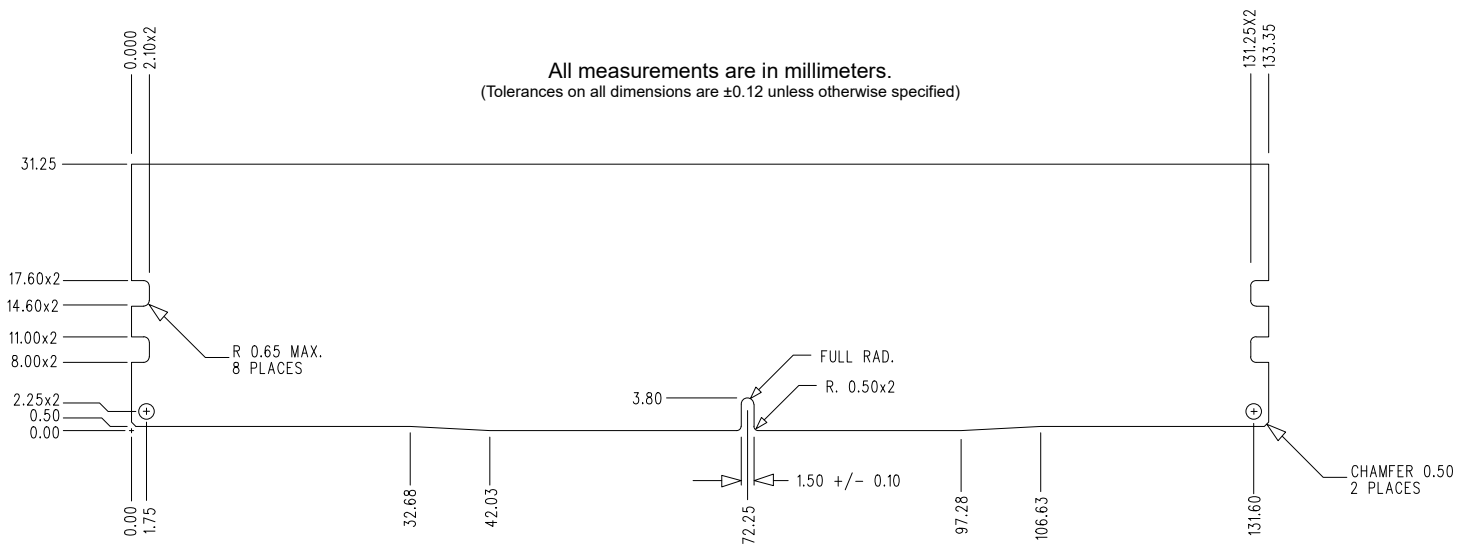
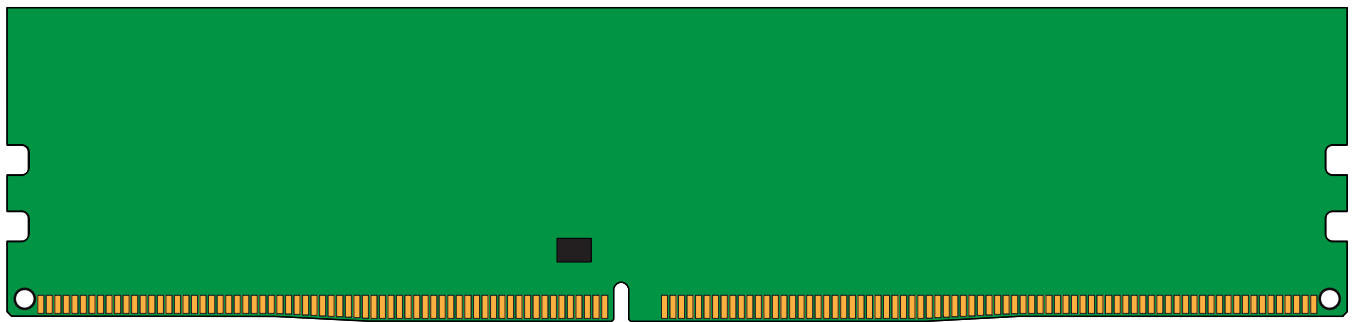
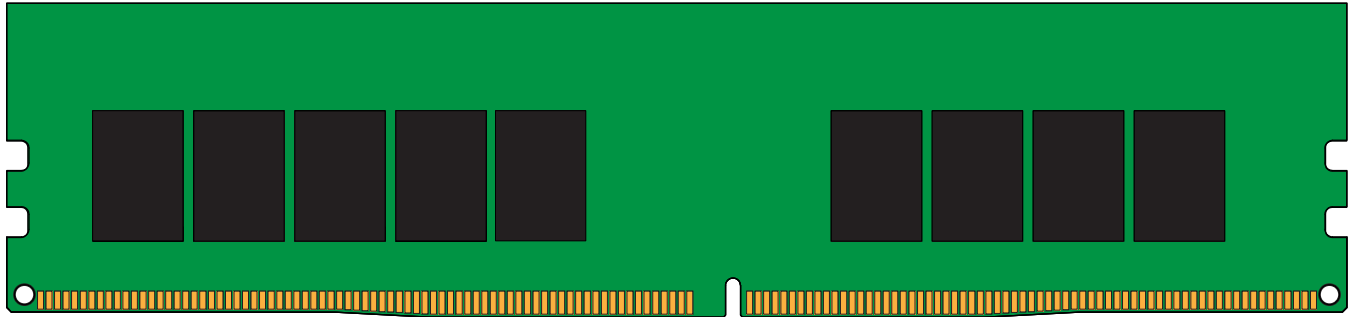
DRAM: MICRON (E-DIE)

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IDD Specifications

Symbol	3200	Units
I _{DD0}	540	mA
I _{PP0}	27	mA
I _{DD1}	639	mA
I _{DD2N}	405	mA
I _{DD2NT}	459	mA
I _{DD2P}	342	mA
I _{DD2Q}	378	mA
I _{DD3N}	549	mA
I _{PP3N}	18	mA
I _{DD3P}	450	mA
I _{DD4R}	1458	mA
I _{DD4W}	1152	mA
I _{DD5R}	612	mA
I _{PP5R}	36	mA
I _{DD6N}	477	mA
I _{DD6E}	1017	mA
I _{DD6R}	180	mA
I _{DD6A} (25°C)	99	mA
I _{DD6A} (45°C)	180	mA
I _{DD6A} (75°C)	459	mA
I _{DD6A} (95°C)	1017	mA
I _{PP6X}	54	mA
I _{DD7}	1665	mA
I _{PP7}	72	mA
I _{DD8}	324	mA

MODULE DIMENSIONS



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