

# Memory Module Specifications

## KSM32ED8/16ME

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

CL19 288-Pin DIMM

### DESCRIPTION

Kingston's KSM32ED8/16ME 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

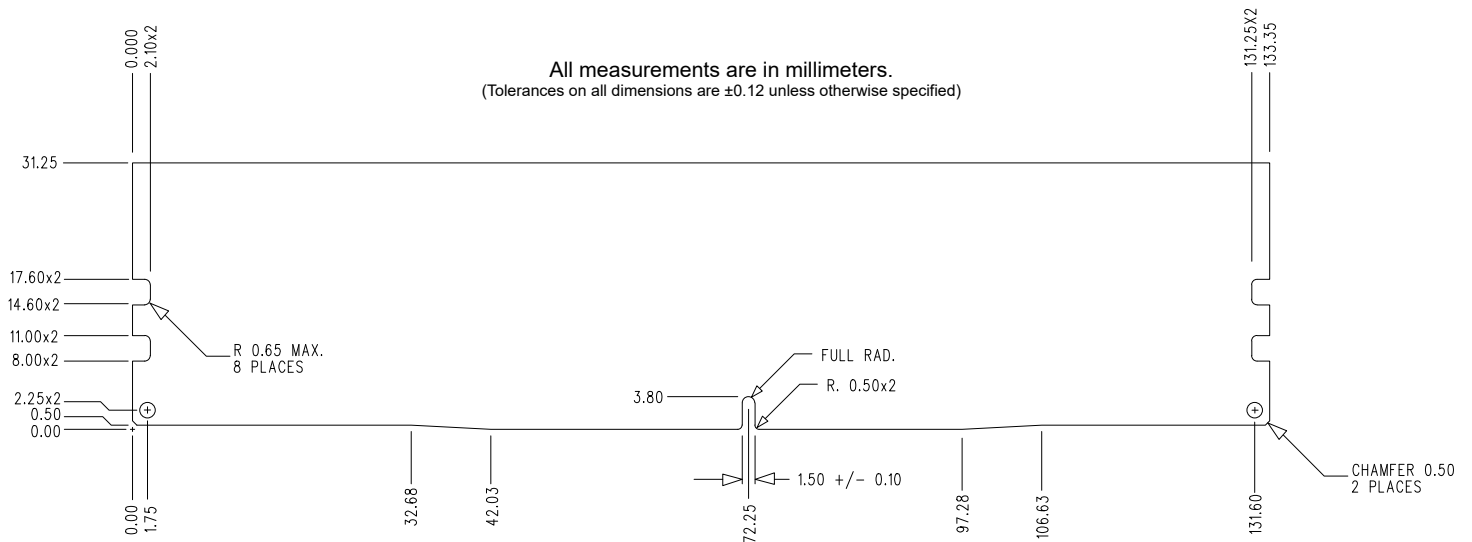
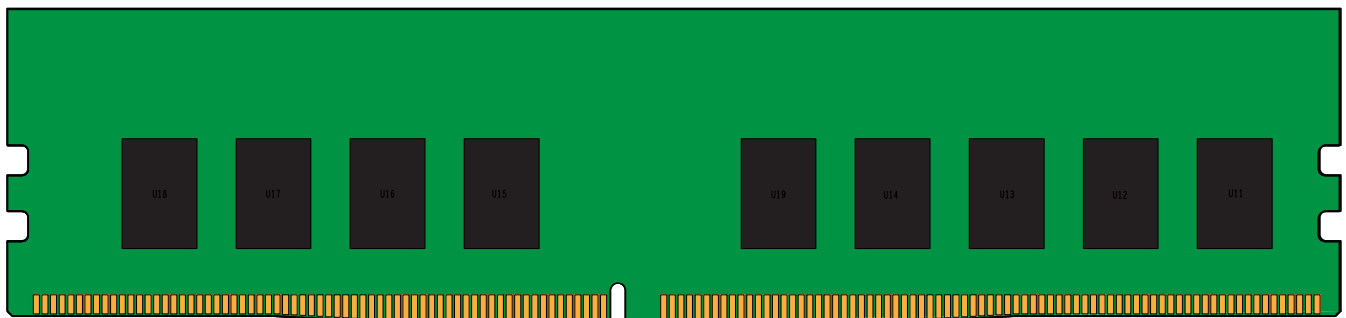
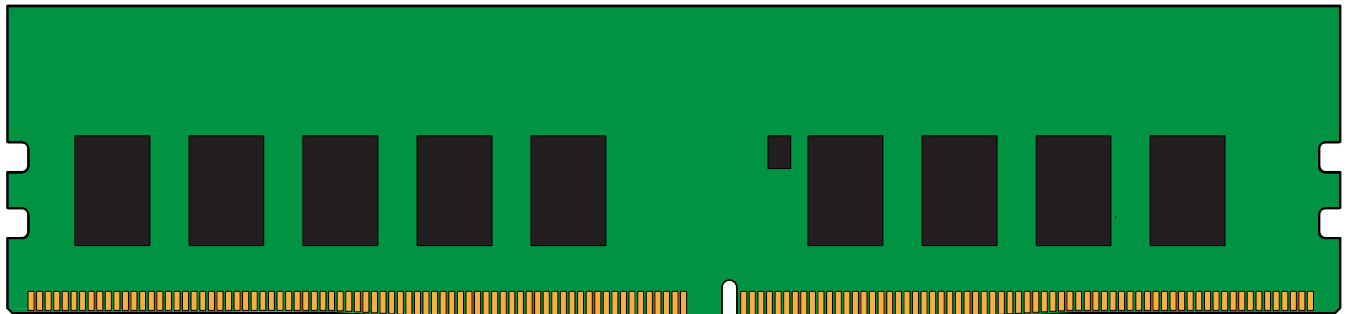
<b>DRAM: MICRON (E-DIE)</b>
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## IDD Specifications

Symbol	3200	Units
I <sub>DD0</sub>	738	mA
I <sub>PP0</sub>	54	mA
I <sub>DD1</sub>	846	mA
I <sub>DD2N</sub>	666	mA
I <sub>DD2NT</sub>	765	mA
I <sub>DD2P</sub>	450	mA
I <sub>DD2Q</sub>	540	mA
I <sub>DD3N</sub>	1008	mA
I <sub>PP3N</sub>	54	mA
I <sub>DD3P</sub>	774	mA
I <sub>DD4R</sub>	1827	mA
I <sub>DD4W</sub>	1620	mA
I <sub>DD5R</sub>	819	mA
I <sub>PP5R</sub>	72	mA
I <sub>DD6N</sub>	612	mA
I <sub>DD6E</sub>	828	mA
I <sub>DD6R</sub>	378	mA
I <sub>DD6A</sub>	154.8	mA
I <sub>DD6A</sub>	378	mA
I <sub>DD6A</sub>	558	mA
I <sub>PP6X</sub>	90	mA
I <sub>DD7</sub>	1971	mA
I <sub>PP7</sub>	162	mA
I <sub>DD8</sub>	450	mA

### MODULE DIMENSIONS



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