

# Memory Module Specifications

## KSM24RS4L/16MEI

16GB 1Rx4 2G x 72-Bit PC4-2400

CL17 Registered w/Parity VLP 288-Pin DIMM

### DESCRIPTION

Kingston's KSM24RS4/16MEI is a 2G x 72-bit (16GB) DDR4-2400 CL17 SDRAM (Synchronous DRAM) registered w/ parity, 1Rx4, ECC, VLP (very low profile) memory module, based on eighteen 2G x 4-bit FBGA components. The SPD is programmed to JEDEC standard latency DDR4-2400 timing of 17-17-17 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 = 2.25V 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: PC4-2400, 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)	17 cycles
Row Cycle Time (tRCmin)	46.16ns(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)

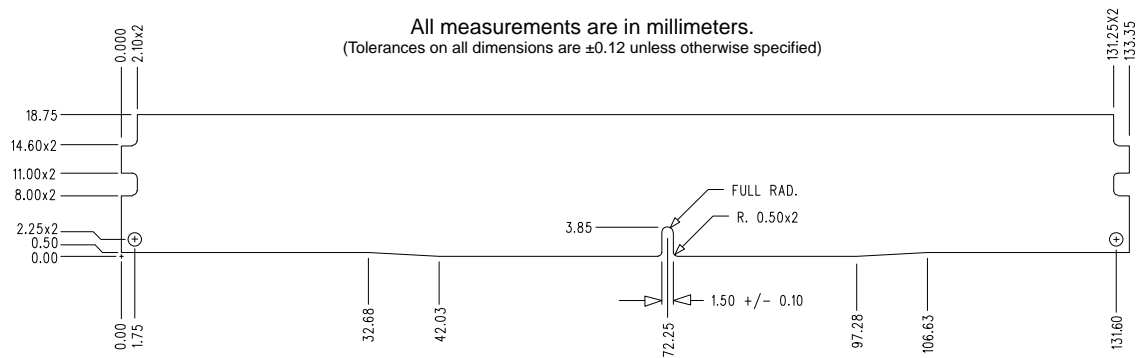
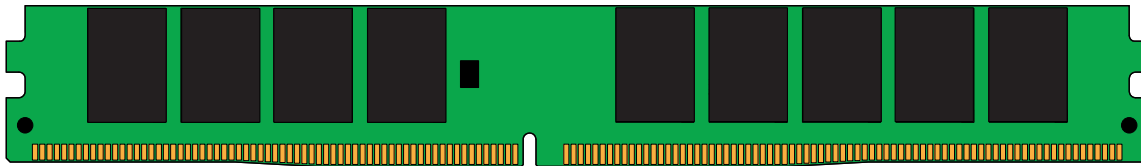
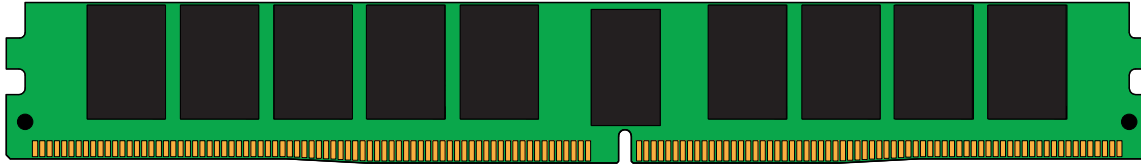
RCD: IDT

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## IDD Specifications

Symbol	2400	Units
$I_{DD0}$	774	mA
$I_{PP0}$	54	mA
$I_{DD1}$	990	mA
$I_{DD2N}$	612	mA
$I_{DD2NT}$	900	mA
$I_{DD2P}$	450	mA
$I_{DD2Q}$	540	mA
$I_{DD3N}$	774	mA
$I_{PP3N}$	54	mA
$I_{DD3P}$	576	mA
$I_{DD4R}$	2160	mA
$I_{DD4W}$	1944	mA
$I_{DD5R}$	1044	mA
$I_{PP5R}$	90	mA
$I_{DD6N}$	612	mA
$I_{DD6E}$	828	mA
$I_{DD6R}$	378	mA
$I_{DD6A}$	154.8	mA
$I_{DD6A}$	378	mA
$I_{DD6A}$	558	mA
$I_{PP6X}$	90	mA
$I_{DD7}$	3330	mA
$I_{PP7}$	306	mA
$I_{DD8}$	450	mA

## MODULE DIMENSIONS



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