

Memory Module Specifications

KSM29ES8/8MR

8GB 1Rx8 1G x 72-Bit PC4-2933

CL21 288-Pin DIMM

DESCRIPTION

Kingston's KSM29ES8/8MR is a 1G x 72-bit (8GB) DDR4-2933 CL21 SDRAM (Synchronous DRAM), 1Rx8, ECC, memory module, based on nine 1G x 8-bit FBGA components. The SPD is programmed to JEDEC standard latency DDR4-2933 timing of 21-21-21 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)	21 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

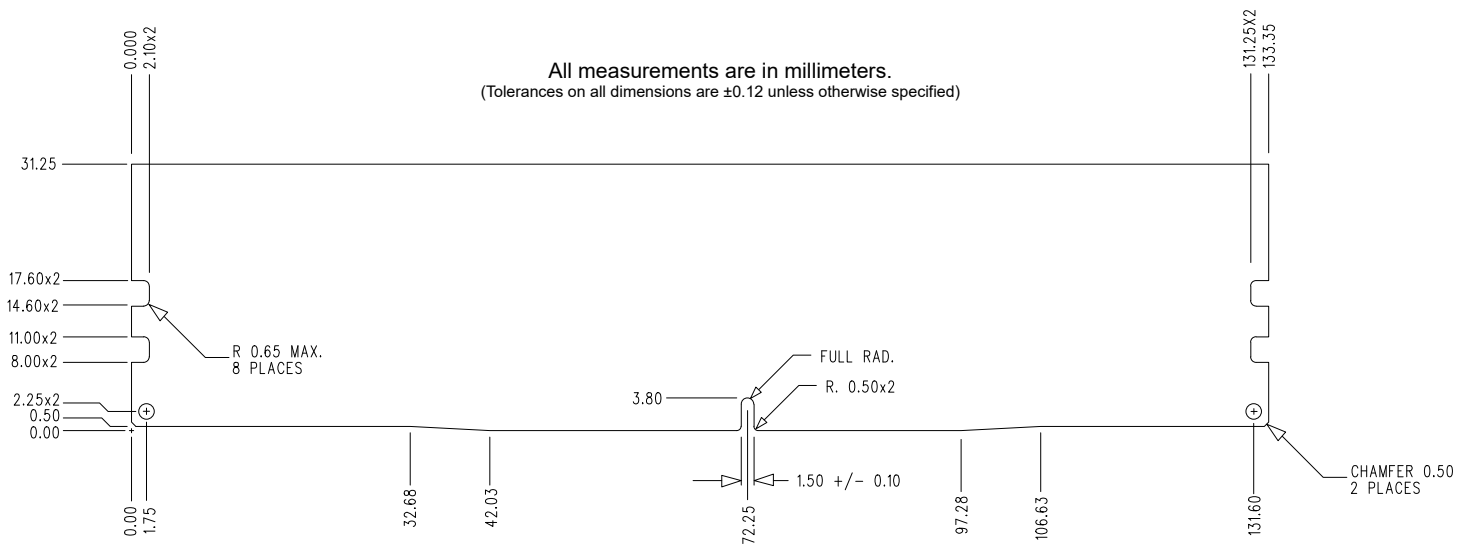
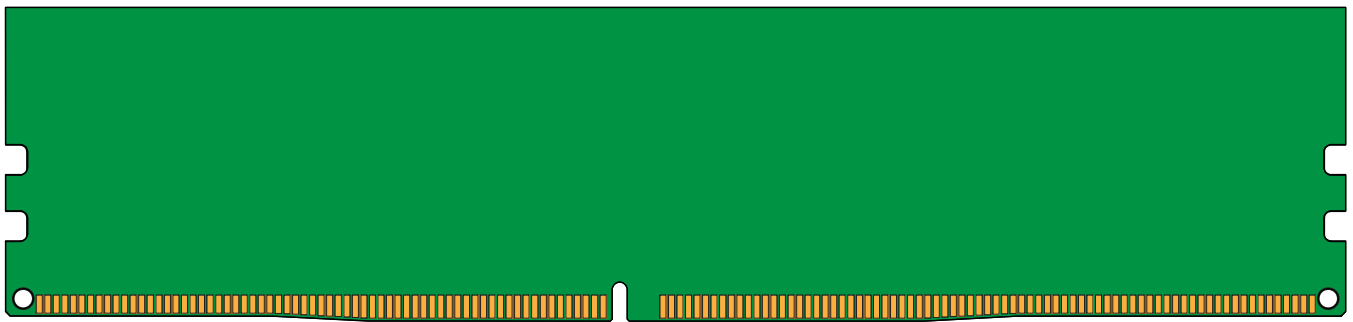
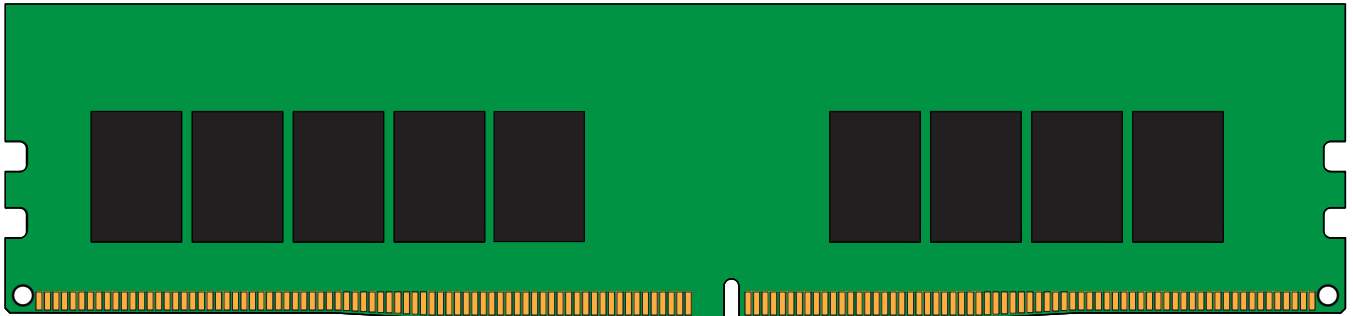
DRAM: Micron (R-DIE)

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IDD Specifications

Symbol	2933	Units
I _{DD0}	414	mA
I _{PP0}	36	mA
I _{DD1}	477	mA
I _{DD2N}	333	mA
I _{DD2NT}	351	mA
I _{DD2P}	270	mA
I _{DD2Q}	306	mA
I _{DD3N}	369	mA
I _{PP3N}	27	mA
I _{DD3P}	288	mA
I _{DD4R}	1017	mA
I _{DD4W}	882	mA
I _{DD5R}	414	mA
I _{PP5R}	45	mA
I _{DD6N}	288	mA
I _{DD6E}	468	mA
I _{DD6R}	171	mA
I _{DD6A}	72	mA
I _{DD6A}	171	mA
I _{DD6A}	261	mA
I _{DD6A}	468	mA
I _{PP6X}	45	mA
I _{DD7}	1350	mA
I _{PP7}	72	mA
I _{DD8}	216	mA

MODULE DIMENSIONS



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