

KSM29SED8/32HA

32GB 2Rx8 4G x 72-Bit PC4-2933

CL21 260-Pin ECC SODIMM

DESCRIPTION

Kingston's KSM29SED8/32HA is a 4G x 72-bit (32GB) DDR4-2933 CL21 SDRAM (Synchronous DRAM) w/ parity, 2Rx8, ECC, memory module, based on eighteen 2G x 8-bit FBGA components. The SPD is programmed to JEDEC standard latency DDR4-2933 timing of 21-21-21 at 1.2V. Each 260-pin SODIMM 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 = 2.20V to 3.60V
- 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: PC4-2933, PC4-2666, 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
- 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: HYNIX (A-DIE)

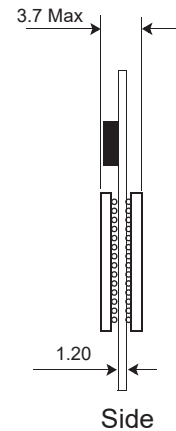
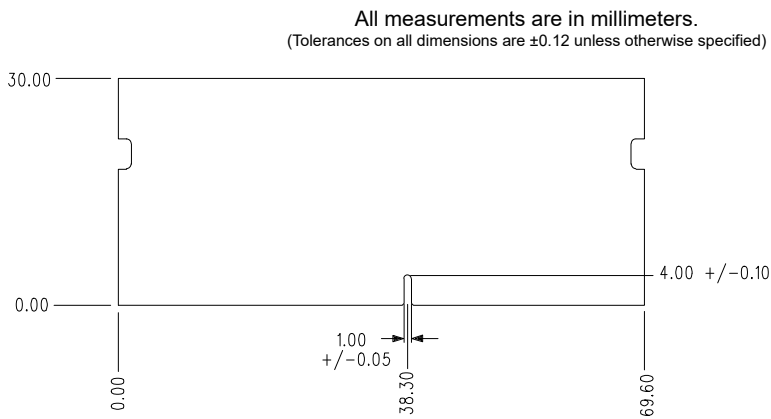
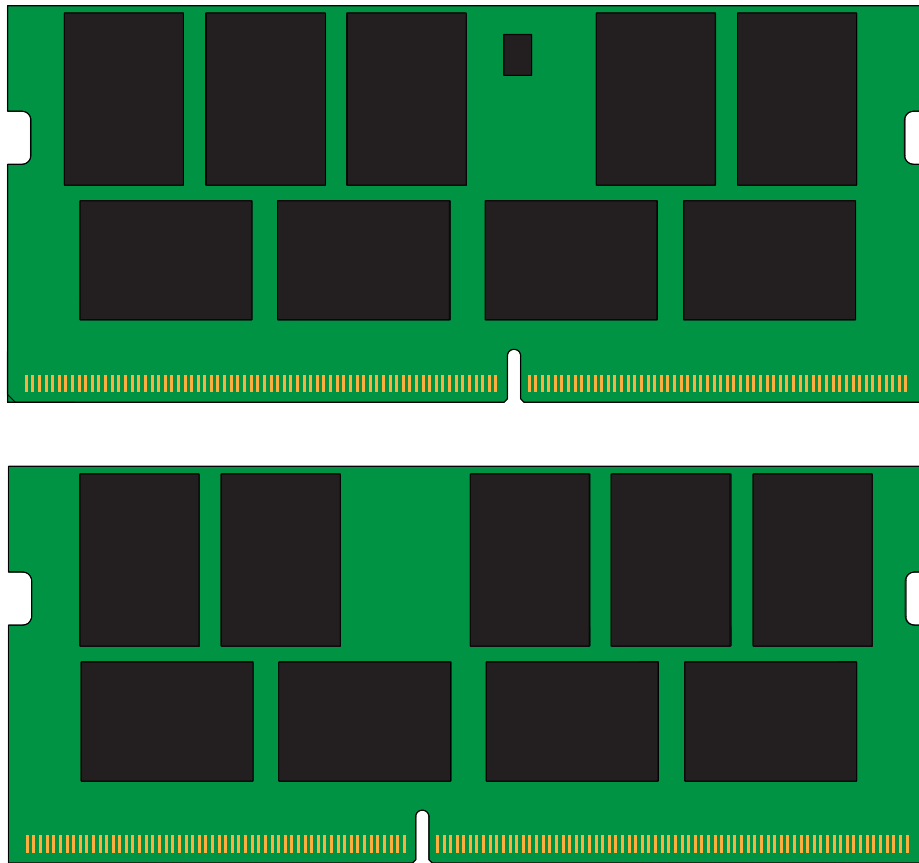
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IDD Specifications

IDD		unit
Symbol	2933	
IDD0	740	mA
IDD0A	742	mA
IDD1	808	mA
IDD1A	839	mA
IDD2N	661	mA
IDD2NA	662	mA
IDD2NT	757	mA
IDD2NL	455	mA
IDD2NG	651	mA
IDD2ND	634	mA
IDD2NP	682	mA
IDD2P	439	mA
IDD2Q	603	mA
IDD3N	987	mA
IDD3NA	987	mA
IDD3P	789	mA
IDD4R	1604	mA
IDD4RA	1611	mA
IDD4RB	1615	mA
IDD4W	1410	mA
IDD4WA	1455	mA
IDD4WB	1350	mA
IDD4WC	1403	mA
IDD4WP	1664	mA
IDD5B	3867	mA
IDD5F2	2817	mA
IDD5F4	2414	mA
IDD6N	588	mA
IDD6E	887	mA
IDD6R	332	mA
IDD6A	887	mA
IDD7	1600	mA
IDD8	249	mA

IPP		unit
Symbol	2933	
IPP0	31	mA
IPP1	31	mA
IPP2N	25	mA
IPP2P	25	mA
IPP3N	35	mA
IPP3P	35	mA
IPP4R	30	mA
IPP4W	30	mA
IPP5B	601	mA
IPP5F2	403	mA
IPP5F4	335	mA
IPP6N	76	mA
IPP6E	129	mA
IPP6R	39	mA
IPP6A	114	mA
IPP7	87	mA
IPP8	25	mA

MODULE DIMENSIONS



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