KSM32ES8/16HC

16GB 1Rx8 2G x 72-Bit PC4-3200
CL22 288-Pin DIMM

DESCRIPTION

Kingston's KSM32ES8/16HC 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: HYNIX (C-DIE)

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IDD Specifications

IDD		unit
Symbol	3200	
IDD0	350	mA
IDD0A	350	mA
IDD1	416	mA
IDD1A	447	mA
IDD2N	262	mA
IDD2NA	262	mA
IDD2NT	299	mA
IDD2NL	185	mA
IDD2NG	262	mA
IDD2ND	241	mA
IDD2NP	269	mA
IDD2P	179	mA
IDD2Q	241	mA
IDD3N	484	mA
IDD3NA	484	mA
IDD3P	412	mA
IDD4R	1136	mA
IDD4RA	1154	mA
IDD4RB	1147	mA
IDD4W	1093	mA
IDD4WA	1136	mA
IDD4WB	1023	mA
IDD4WC	1087	mA
IDD4WP	1317	mA
IDD5B	4759	mA
IDD5F2	3280	mA
IDD5F4	2719	mA
IDD6N	342	mA
IDD6E	544	mA
IDD6R	147	mA
IDD6A	579	mA
IDD7	1318	mA
IDD8	91	mA

IPP		unit
Symbol	3200	
IPP0	22	mA
IPP1	25	mA
IPP2N	8	mA
IPP2P	8	mA
IPP3N	10	mA
IPP3P	10	mA
IPP4R	45	mA
IPP4W	45	mA
IPP5B	484	mA
IPP5F2	316	mA
IPP5F4	262	mA
IPP6N	33	mA
IPP6E	58	mA
IPP6R	14	mA
IPP6A	51	mA
IPP7	132	mA
IPP8	8	mA