

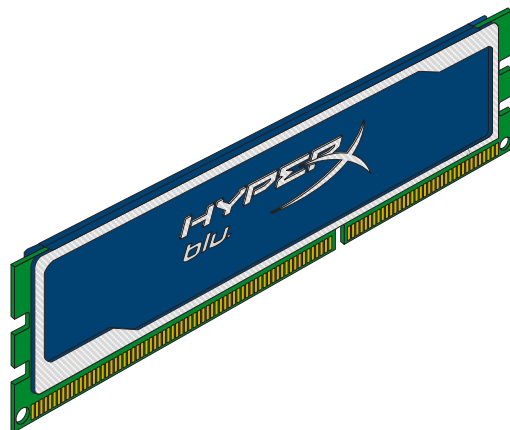
Memory Module Specifications



KHX1600C9D3B1/4G

4GB 512M x 64-Bit DDR3-1600

CL9 240-Pin DIMM



DESCRIPTION

HyperX KHX1600C9D3B1/4G is a 512M x 64-bit (4GB) DDR3-1600 CL9 SDRAM (Synchronous DRAM), 1Rx8 memory module, based on eight 512M x 8-bit FBGA components. This module has been tested to run at DDR3-1600 at a low latency timing of 9-9-9 at 1.65V. The SPD is programmed to JEDEC standard latency DDR3-1600 timing of 11-11-11 at 1.5V. This 240-pin DIMM uses gold contact fingers. The JEDEC electrical and mechanical specifications are as follows:

SPECIFICATIONS

CL(IDD)	11 cycles
Row Cycle Time (tRCmin)	48.125ns (min.)
Refresh to Active/Refresh Command Time (tRFCmin)	260ns (min.)
Row Active Time (tRASmin)	35ns (min.)
Maximum Operating Power	2.160 W*
UL Rating	94 V - 0
Operating Temperature	0° C to 85° C
Storage Temperature	-55° C to +100° C

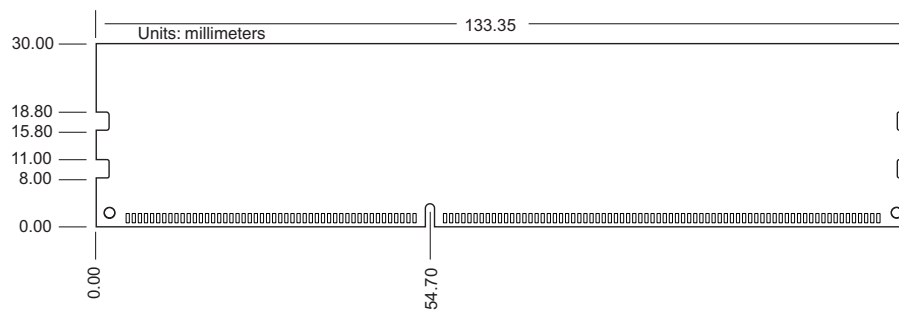
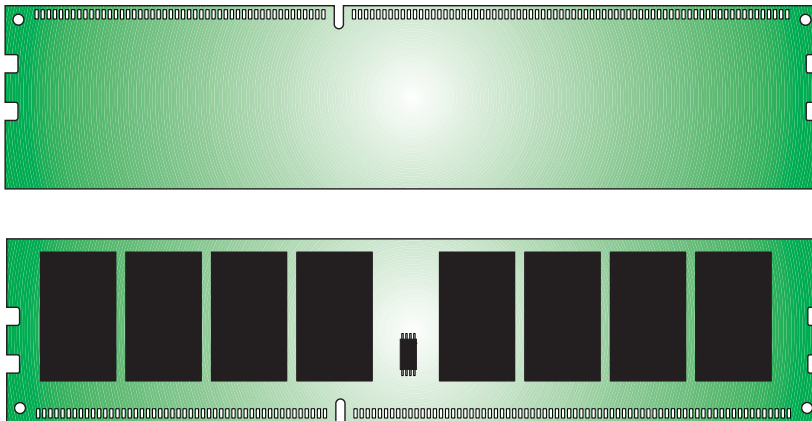
*Power will vary depending on the SDRAM used.

FEATURES

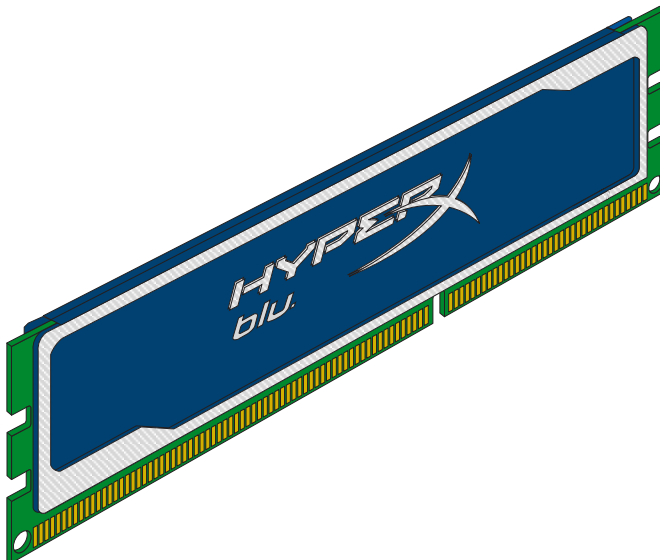
- JEDEC standard 1.5V (1.425V ~ 1.575V) Power Supply
- VDDQ = 1.5V (1.425V ~ 1.575V)
- 800MHz fCK for 1600Mb/sec/pin
- 8 independent internal bank
- Programmable CAS Latency: 11, 10, 9, 8, 7, 6
- Programmable Additive Latency: 0, CL - 2, or CL - 1 clock
- 8-bit pre-fetch
- Burst Length: 8 (Interleave without any limit, sequential with starting address "000" only), 4 with tCCD = 4 which does not allow seamless read or write [either on the fly using A12 or MRS]
- Bi-directional Differential Data Strobe
- Internal(self) calibration : Internal self calibration through ZQ pin (RZQ : 240 ohm $\pm$ 1%)
- On Die Termination using ODT pin
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE $\leq$ 95°C
- Asynchronous Reset
- PCB : Height 1.180" (30.00mm), single sided component

Continued >>

MODULE DIMENSIONS



MODULE WITH HEAT SPREADER



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