

Memory Module Specifications

KHX16C9X3/4

4GB 512M x 64-Bit DDR3-1600
CL9 240-Pin DIMM



SPECIFICATIONS

CL(IDD)	9 cycles
Row Cycle Time (tRCmin)	49.5ns (min.)
Refresh to Active/Refresh Command Time (tRFCmin)	160ns (min.)
Row Active Time (tRASmin)	36ns (min.)
Maximum Operating Power	2.400 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.

DESCRIPTION

This document describes Kingston's 512M x 64-bit (4GB) DDR3-1600 CL9 SDRAM (Synchronous DRAM), 2Rx8 memory module, based on sixteen 256M x 8-bit FBGA components. This module supports Intel® XMP (Extreme Memory Profiles). 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 DDR3-1333 timing of 9-9-9 at 1.5V. This 240-pin DIMM uses gold contact fingers. The JEDEC standard electrical and mechanical specifications are as follows:

XMP TIMING PARAMETERS

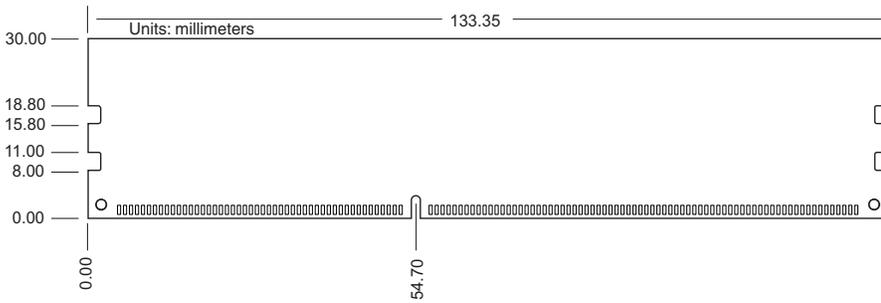
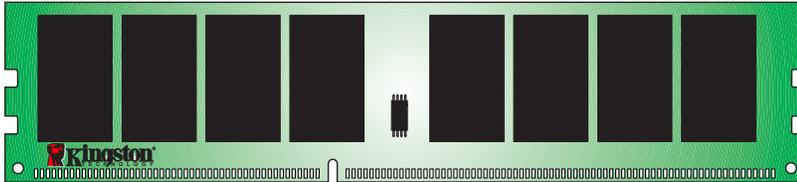
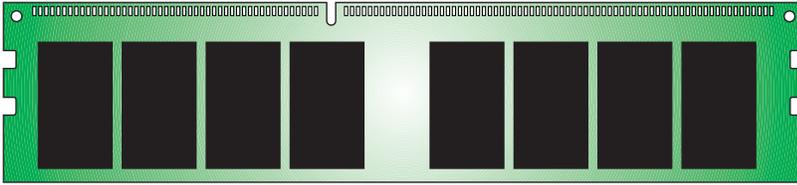
- JEDEC: DDR3-1333 CL9-9-9 @1.5V
- XMP Profile #1: D3-1600 CL9-9-9 @1.65V

FEATURES

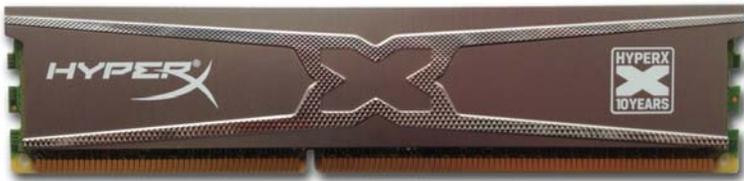
- JEDEC standard 1.5V (1.425V ~ 1.575V) Power Supply
- VDDQ = 1.5V (1.425V ~ 1.575V)
- 667MHz fCK for 1333Mb/sec/pin
- 8 independent internal bank
- Programmable CAS Latency: 9, 8, 7, 6
- Programmable Additive Latency: 0, CL - 2, or CL - 1 clock
- Programmable CAS Write Latency(CWL) = 7 (DDR3-1333)
- 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 ± 1%)
- On Die Termination using ODT pin
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE ≤ 95°C
- Asynchronous Reset
- PCB : Height 1.18" (30.00mm) double sided component

Continued >>

MODULE DIMENSIONS



MODULE WITH HEAT SPREADER



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All Kingston products are tested to meet our published specifications. Some motherboards or system configurations may not operate at the published HyperX memory speeds and timing settings. Kingston does not recommend that any user attempt to run their computers faster than the published speed. Overclocking or modifying your system timing may result in damage to computer components.