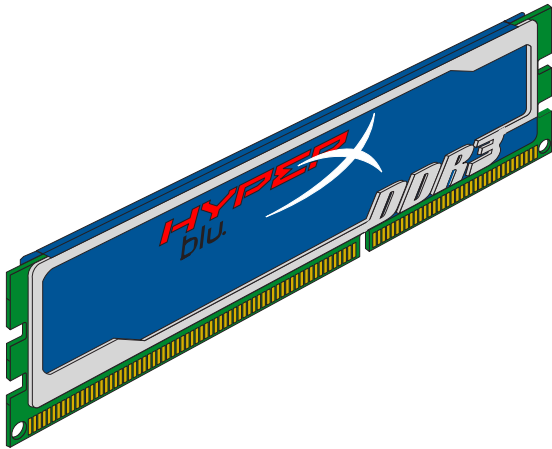


# Memory Module Specifications

## KHX1333C9D3B1K2/2G

2GB (1GB 128M x 64-Bit x 2 pcs.) DDR3-1333MHz  
CL9 240-Pin DIMM Kit



### DESCRIPTION

Kingston's KHX1333C9D3B1K2/2G is a kit of two 128M x 64-bit (1GB) DDR3-1333MHz CL9 SDRAM (Synchronous DRAM) memory modules, based on eight 128M x 8-bit DDR3 FBGA components per module. Total kit capacity is 2GB. The SPDs are programmed to JEDEC standard latency DDR3-1333MHz timing of 9-9-9 at 1.5V. Each 240-pin DIMM uses gold contact fingers and requires +1.5V. The JEDEC standard electrical and mechanical specifications are as follows:

### SPECIFICATIONS

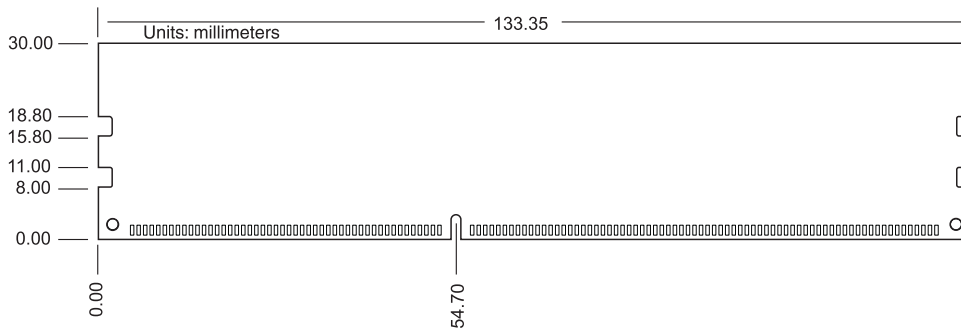
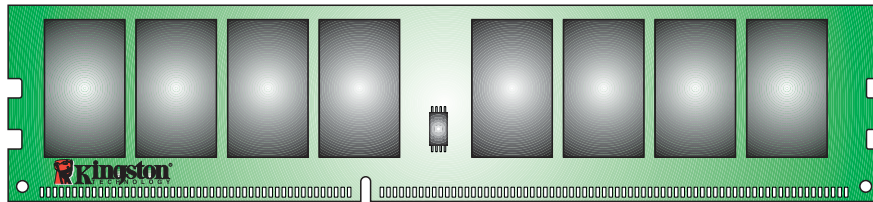
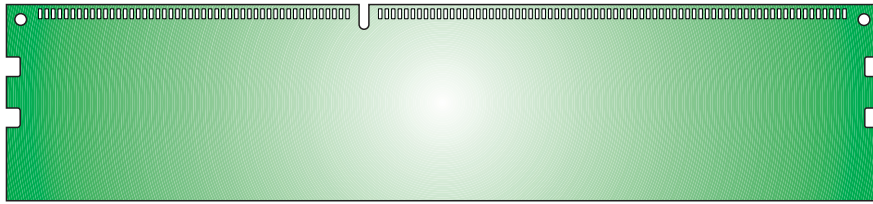
CL(I <sub>DD</sub> )	9 cycles
Row Cycle Time (t <sub>RCmin</sub> )	49.5ns (min.)
Refresh to Active/Refresh Command Time (t <sub>RFCmin</sub> )	110ns
Row Active Time (t <sub>RASmin</sub> )	36ns (min.)
Power	1.080 W (operating per module)
UL Rating	94 V - 0
Operating Temperature	0° C to 85° C
Storage Temperature	-55° C to +100° C

### FEATURES

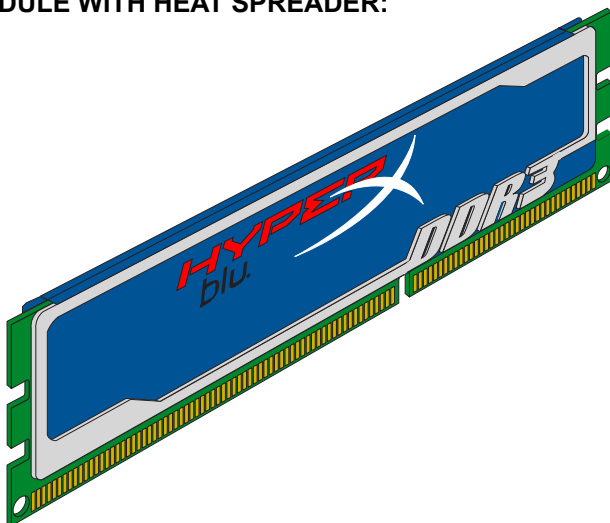
- JEDEC standard 1.5V ± 0.075V Power Supply
- VDDQ = 1.5V ± 0.075V
- 667MHz f<sub>CK</sub> for 1333Mb/sec/pin
- 8 independent internal bank
- Programmable CAS Latency: 5,6,7,8,9,10
- Posted CAS
- Programmable Additive Latency: 0, CL - 2, or CL - 1 clock
- Programmable CAS Write Latency(CWL) = 7(DDR3-1333)
- 8-bit pre-fetch
- Burst Length: 8 (Interleave without any limit, sequential with starting address "000" only), 4 with t<sub>CCD</sub> = 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 1.180" (30.00mm), single sided component

Continued >>

**MODULE DIMENSIONS:**



**MODULE WITH HEAT SPREADER:**



FOR MORE INFORMATION, GO TO [WWW.KINGSTON.COM](http://WWW.KINGSTON.COM)

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.