

## Memory Module Specifications

### KHX1600C9S3K2/4G

4GB (2GB 256M x 64-Bit x 2 pcs.)

DDR3-1600MHz CL9 204-Pin SODIMM Kit



### SPECIFICATIONS

CL(IDD)	9 cycles
Row Cycle Time (tRCmin)	48.125ns (min.)
Refresh to Active/Refresh Command Time (tRFCmin)	110ns
Row Active Time (tRASmin)	33.75ns (min.)
Power	1.975 W (operating per module)
UL Rating	94 V - 0
Operating Temperature	0° C to 85° C
Storage Temperature	-55° C to +100° C

### DESCRIPTION

Kingston's KHX1600C9S3K2/4G is a kit of two 256M x 64-bit (2GB) DDR3-1600 CL9 SDRAM (Synchronous DRAM) memory modules, based on sixteen 128M x 8-bit DDR3 FBGA components per module. Total kit capacity is 4GB. Each module kit has been tested to run at DDR3-1600 at a low latency timing of 9-9-9 at 1.5V. The SPDs are programmed as specified in the Timing Parameters section. Each 204-pin SODIMM uses gold contact fingers and requires +1.5V. The electrical and mechanical specifications are as follows:

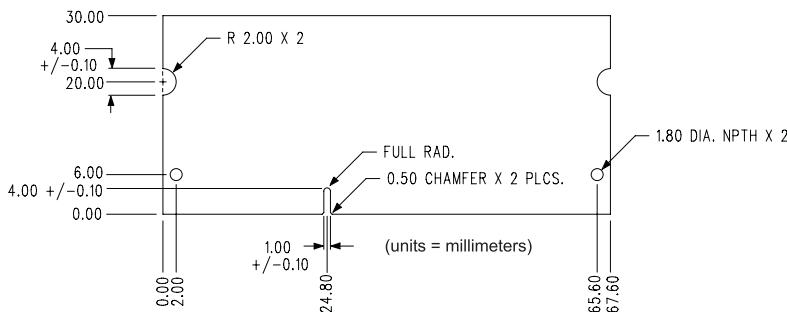
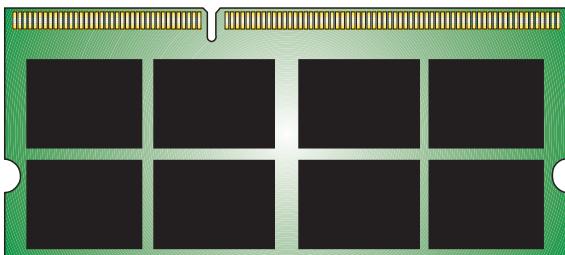
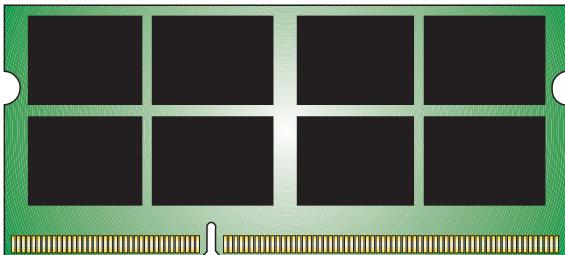
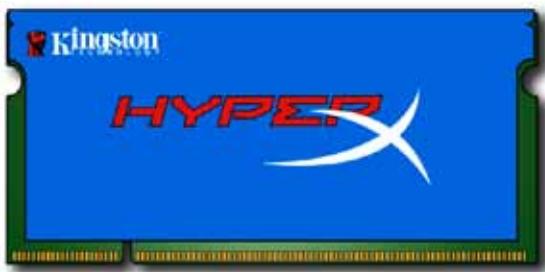
### TIMING PARAMETERS

- DDR3-1600 CL9-9-9 @1.5V
- DDR3-1333 CL8-8-8 @1.5V
- DDR3-1066 CL6-6-6 @1.5V

### FEATURES

- JEDEC standard 1.5V  $\pm$  0.075V Power Supply
- VDDQ = 1.5V  $\pm$  0.075V
- 800MHz fCK for 1600Mb/sec/pin
- 8 independent internal bank
- Programmable CAS Latency: 5,6,7,8,9,10,11
- Posted CAS
- Programmable Additive Latency: 0, CL - 2, or CL - 1 clock
- Programmable CAS Write Latency(CWL) = 8(DDR3-1600)
- 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 1.18" (30.00mm) double sided component
- RoHS Compliant

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.