

## DDRIII SDRAM 1600/1333/1066 204-PIN SO\_DIMM 4GB 256Mx16

### DESCRIPTION:

This document describes Aplus 512M x 64-bit 4GB DDR3 SDRAM (Synchronous DRAM) Dual In-Line Memory Module. The components on this module include eight 256M x 16-bit DDR3 SDRAMs in FBGA packages and a 2048-bit serial EEPROM. Those components were mounted on a 204-pin printed circuit board. This 204-pin SO\_DIMM is used to be mounted into 204-pin edge connector sockets and data I/O transactions could be apply on both edges of DQS. The electrical and mechanical specifications are as follows:

### FEATURES:

- DDR3 functionality and operations supported as defined in the component data sheet
- 204-pin, small-outline dual in-line memory module (SODIMM)
- Fast data transfer rates: PC3-12800, PC3-10600, PC3-8500
- 4GB (512 Meg x 64)
- VDD = 1.5V  $\pm$ 0.075V
- VDDSPD = 3.0–3.6V
- Nominal and dynamic on-die termination (ODT) for data, strobe, and mask signals
- Dual rank
- Serial presence-detect (SPD) EEPROM
- 8 internal device banks
- 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)
- Gold edge contacts
- Halogen-free
- Fly-by topology
- Terminated control, command, and address bus

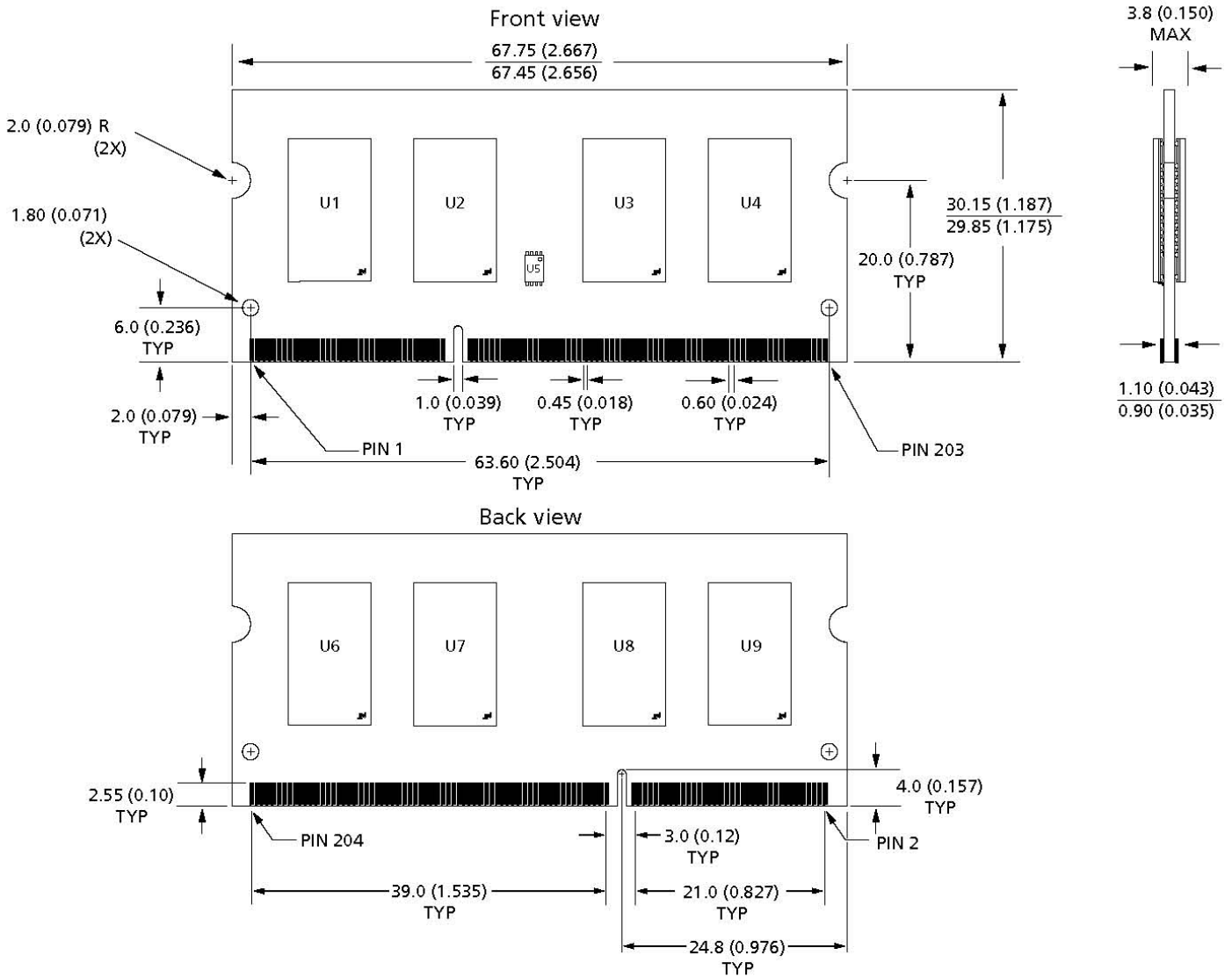
### Options

- Operating temperature<sup>1</sup>
  - Commercial (0°C  $\leq$ TA  $\leq$ +70°C)
- Frequency/CAS latency
  - 1.25ns @ CL = 11 (DDR3-1600)
  - 1.5ns @ CL = 9 (DDR3-1333)
  - 1.87ns @ CL = 7 (DDR3-1066)

### PERFORMANCE:

Industry	Data Rate (MT/s)					tRCD (ns)	tRP (ns)	tRC (ns)	Module Bandwidth	Memory Clock/ Data Rate	Clock Cycles (CL-tRCD-tRP)
	CL = 11	CL = 10	CL = 9	CL = 8	CL = 7						
PC3-12800	1600	1333	1333	1066	1066	13.125	13.125	48.125	12.8 GB/s	1.25ns/1600 MT/s	11-11-11
PC3-10600	–	1333	1333	1066	1066	13.125	13.125	49.125	10.6 GB/s	1.5ns/1333 MT/s	9-9-9
PC3-8500	–	–	–	1066	1066	13.125	13.125	50.625	8.5 GB/s	1.87ns/1066 MT/s	7-7-7

### 204-Pin DDR3 SODIMM



- Notes: 1. All dimensions are in millimeters (inches); MAX/MIN or typical (TYP) where noted.  
2. The dimensional diagram is for reference only.