

## 1.35V DDRIII SDRAM 1600/1333/1066 244-PIN Mini DIMM 8GB 512Mx8

### DESCRIPTION:

This document describes Aplus1Gx72-bit 8GB DDR3 SDRAM (Synchronous DRAM) Dual In-Line Memory Module with ECC. The components on this module include eighteen 512MBx 8-bit DDR3 SDRAMs in FBGA packages and a 2048-bit serial EEPROM. Those components were mounted on a 244-pin printed circuit board. This 244-pin Mini DIMM is used to be mounted into 244-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

- DDR3L functionality and operations supported as defined in the component data sheet
- 244-pin, 82mm, unbuffered dual in-line memory module (Mini-DIMM)
- Fast data transfer rates: PC3-12800, PC3-10600, PC3-8500
- 8GB (1 Gig x72)
- $V_{DD} = 1.35V$  (1.235–1.45V)
- $V_{DD} = 1.5V$  (1.425–1.575V)
- Backward compatible to  $V_{DD} = 1.5V \pm 0.075V$
- $V_{DDSPD} = 3.0\text{--}3.6V$
- Supports ECC error detection and correction
- Nominal and dynamic on-die termination (ODT) for data, strobe, and mask signals
- Dual rank
- On-board  $I^2C$  temperature sensor with integrated 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 temperature1

– Commercial ( $0^{\circ}C \leq TA \leq +70^{\circ}C$ )

Frequency/CAS latency

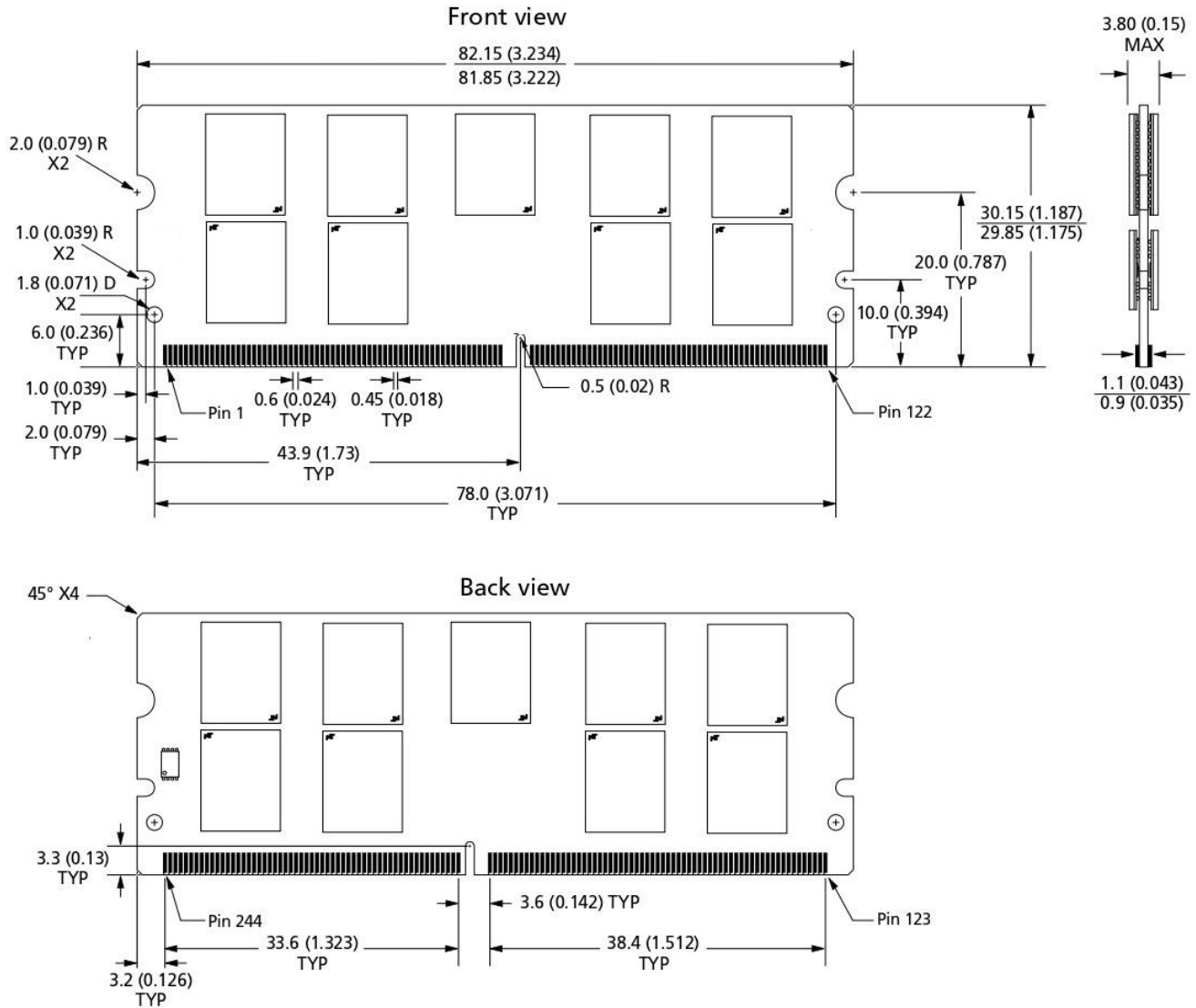
– 1.25ns @ CL = 11 (DDR3-1600)

– 1.5ns @ CL = 9 (DDR3-1333)

– 1.87ns @ CL = 7 (DDR3-1066)

Industry Nomenclature	Data Rate (MT/s)						tRCD (ns)	tRP (ns)	tRC (ns)	Module Bandwidth	Memory Clock/ Data Rate	Clock Cycles (CL-tRC D-tRP)
	CL=13	CL=11	CL=10	CL=9	CL=8	CL=7						
PC3-12800	–	1600	1333	1333	1066	1066	13.125	13.125	48.125	12.8GB/s	1.25ns/1600 MT/s	11-11-11
PC3-10600	–	–	1333	1333	1066	1066	13.125	13.125	49.125	10.6GB/s	1.5ns/1333 MT/s	9-9-9
PC3-8500	–	–	–	–	–	1066	13.125	13.125	50.625	8.5GB/s	1.87ns/1066 MT/s	7-7-7

### 244-Pin DDR3 Mini DIMM



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