8 GB DDR3L SDRAM – AS4Cxxx SERIES

FEATURES

- » VDD = VDDQ = 1.35V (1.283–1.45V)
- » Backward compatible to VDD = VDDQ = 1.5V ±0.075V
- » Differential bidirectional data strobe
- » 8n-bit prefetch architecture
- » Differential clock inputs (CK, CK#)
- » 8 internal banks
- » Nominal and dynamic on-die termination (ODT) for data, strobe, and mask signals
- » Programmable CAS (READ) latency (CL)
- » Programmable posted CAS additive latency (AL)
- » Programmable CAS (WRITE) latency (CWL)
- » Fixed burst length (BL) of 8 and burst chop (BC) of 4 (via the mode register set [MRS])
- » Selectable BC4 or BL8 on-the-fly (OTF)
- » Self refresh mode
- » TC of 0°C to +95°C
  - 64ms, 8192-cycle refresh at 0°C to +85°C
  - 32ms at +85°C to +95°C
- » Self refresh temperature (SRT)
- » Automatic self refresh (ASR)
- » Write leveling
- » Multipurpose register
- » Output driver calibration

The **DDR3 SDRAM** is a high-speed, CMOS dynamic random access memory. It is internally configured as an 8-bank DRAM of 1.5V or less.

AS4C2GM4D3L – 256 Meg x 4 x 8 banks
AS4C1GM8D3L– 128 Meg x 8 x 8 banks
AS4C512M16D3L – 64 Meg x 16 x 8 banks

OPTIONS	MARKING
» Configuration	
– 2 Gig × 4	2G4
– 1 Gig × 8	1G8
– 512 Meg × 16	512M16
» FBGA package (Pb-free) – ×4, ×8	
– 78-ball (9mm x 13.2mm)	B
» FBGA package (Pb-free) – ×16	
– 96-ball (9mm × 14mm)	B
» Timing – cycle time	
– 938 ps @ CL = 14 (DDR3-2133)	-09
– 1.07ns @ CL = 13 (DDR3-1866)	-10
– 1.25ns @ CL = 11 (DDR3-1600)	-12
» Operating temperature	
– Commercial (0°C ≤ TC ≤ +95°C)	C
– Industrial (−40°C ≤ TC ≤ +95°C)	I

ORDERING INFORMATION

PART NUMBER	CLOCK FREQUENCY	DATA RATE	OP. TEMPERATURE RANGE	PACKAGE	VOLTAGE SUPPLY
AS4C2GM4D3L-12BCN	800 MHz	1600	Commercial	78-ball (9 mm×13.2 mm) FBGA	1.35 V (1.283 V ... 1.45 V)
AS4C2GM4D3L-12BIN	800 MHz	1600	Industrial	78-ball (9 mm×13.2 mm) FBGA	1.35 V (1.283 V ... 1.45 V)
AS4C1GM8D3L-12BCN	800 MHz	1600	Commercial	78-ball (9 mm×13.2 mm) FBGA	1.35 V (1.283 V ... 1.45 V)
AS4C1GM8D3L-12BIN	800 MHz	1600	Industrial	78-ball (9 mm×13.2 mm) FBGA	1.35 V (1.283 V ... 1.45 V)
AS4C512GM16D3L-12BCN	800 MHz	1600	Commercial	96-ball (9 mm×14 mm) FBGA	1.35 V (1.283 V ... 1.45 V)
AS4C512GM16D3L-12BIN	800 MHz	1600	Industrial	96-ball (9 mm×14 mm) FBGA	1.35 V (1.283 V ... 1.45 V)

new