AS4C32M8D1, AS4C64M8D1, and AS4C64M16D1: New High-Speed CMOS DDR SDRAMs

The News: Alliance Memory introduces new high-speed CMOS double data rate synchronous DRAMs (DDR SDRAM) with densities of 256 Mb (AS4C32M8D1), 512 Mb (AS4C64M8D1), and 1 Gb (AS4C64M16D1).

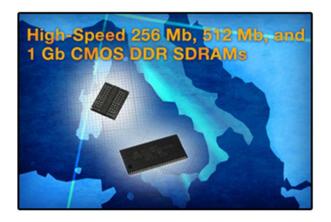**Key Specifications and Benefits:**
- Offered in the 60-ball 8-mm by 13-mm by 1.2 mm TFBGA package and the 66-pin TSOP II package with a 0.65-mm pin pitch
- Internally configured as four banks of 32M word x 8 bits (AS4C32M8D1), 64M word x 8 bits (AS4C64M8D1), and 64M word x 16 bits (AS4C64M16D1) with a synchronous interface
- Available in commercial (0 °C to +70 °C) and industrial (-40 °C to +85 °C) temperature ranges
- Programmable read or write burst lengths of 2, 4, or 8
- Auto pre-charge function provides a self-timed row pre-charge initiated at the end of the burst sequence
- Easy-to-use refresh functions include auto- or self-refresh
- Programmable mode register allows the system to choose the most suitable modes to maximize performance
- Fast clock rates of 200 MHz and 166 MHz
- Operate from a single +2.5-V (± 0.2 V) power supply
- Lead (Pb)- and halogen-free

Target Applications:
- Industrial, medical, communications, and telecom products
- PC applications

The Context: The AS4C32M8D1, AS4C64M8D1, and AS4C64M16D1 provide reliable drop-in, pin-for-pin-compatible replacements for a number of similar solutions in industrial, medical, communications, and telecom products requiring high memory bandwidth, and they are particularly well-suited to high performance in PC applications.

With the addition of the new devices, Alliance Memory now offers the most extensive line-up of DDR SDRAMs in the industry, featuring densities of 64 Mb, 128 Mb, 256 Mb, 512 Mb, and 1 Gb. For Alliance Memory's customers, the devices eliminate costly redesigns by providing

long-term support for end-of-life (EOL) components. In addition, the company doesn't perform die shrinks, which frees up engineering resources.

Availability: Samples and production quantities of the new DDR SDRAMs are available now, with lead times of six to eight weeks for large orders.

Alliance Memory's Complete DDR1 Portfolio

Part #	Density	Configuration	Clock rate	Temp. range	Package
AS4C4M16D1A-5TCN	64 Mb	4M x 16 bit	200 MHz	0 °C to +70 °C	66-pin TSOP II
AS4C4M16D1A-5TIN	64 Mb	4M x 16 bit	200 MHz	-40 °C to +85 °C	66-pin TSOP II
AS4C8M16D1A-5TCN	128 Mb	8M x 16 bit	200 MHz	0 °C to +70 °C	66-pin TSOP II
AS4C8M16D1A-5TIN	128 Mb	8M x 16 bit	200 MHz	-40 °C to +85 °C	66-pin TSOP II
AS4C16M16D1A-5TCN	256 Mb	16M x 16 bit	200 MHz	0 °C to +70 °C	66-pin TSOP II
AS4C16M16D1A-5TIN	256 Mb	16M x 16 bit	200 MHz	-40 °C to +85 °C	66-pin TSOP II
AS4C16M16D1-5BCN	256 Mb	16M x 16 bit	200 MHz	0 °C to +70 °C	60-ball TFBGA
AS4C16M16D1-5BIN	256 Mb	16M x 16 bit	200 MHz	-40 °C to +85 °C	60-ball TFBGA
AS4C32M8D1-5TCN	256 Mb	32M x 8 bit	200 MHz	0 °C to +70 °C	66-pin TSOP II
AS4C32M8D1-5TIN	256 Mb	32M x 8 bit	200 MHz	-40 °C to +85 °C	66-pin TSOP II
AS4C32M16D1A-5TCN	512 Mb	32M x 16 bit	200 MHz	0 °C to +70 °C	66-pin TSOP II
AS4C32M16D1A-5TIN	512 Mb	32M x 16 bit	200 MHz	40 °C to +85 °C	66-pin TSOP II
AS4C32M16D1-5BCN	512 Mb	32M x 16 bit	200 MHz	0 °C to +70 °C	60-ball TFBGA
AS4C32M16D1-5BIN	512 Mb	32M x 16 bit	200 MHz	40 °C to +85 °C	60-ball TFBGA
AS4C64M8D1-5TCN	512 Mb	64M x 8 bit	200 MHz	0 °C to +70 °C	66-pin TSOP II
AS4C64M8D1-5TIN	512 Mb	64M x 8 bit	200 MHz	-40 °C to +85 °C	66-pin TSOP II
AS4C64M8D1-5BCN	512 Mb	64M x 8 bit	200 MHz	0 °C to +70 °C	60-ball TFBGA
AS4C64M8D1-5BIN	512 Mb	64M x 8 bit	200 MHz	-40 °C to +85 °C	60-ball TFBGA
AS4C64M16D1-6TCN	1 Gb	64M x 16 bit	166 MHz	0 °C to +70 °C	66-pin TSOP II
AS4C64M16D1-6TIN	1 Gb	64M x 16 bit	166 MHz	-40 °C to +85 °C	66-pin TSOP II

New Product Datasheets:
(AS4C32M8D1-5TCN, AS4C32M8D1-5TIN)

http://www.alliancememory.com/pdf/ddr1/512M-AS4C64M8D1.pdf
(AS4C64M8D1-5TCN, AS4C64M8D1-5TIN, AS4C64M8D1-5BCN, AS4C64M8D1-5BIN)

http://www.alliancememory.com/pdf/ddr1/1GB-AS4C64M16D1.pdf
(AS4C64M16D1-6TCN, AS4C64M16D1-6TIN)

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