



12815 NE 124th St STE#D, Kirkland, WA-98034

AS4C512M16D3L-12BCN vs AS4C512M16D3LA-10BCN vs AS4C512M16D3LB-12BCN vs AS4C512M16D3LC-xxBCN Comparison

Part Number & result Parameter	AS4C512M16D3L-12BCN MT41K512M16HA-125	AS4C512M16D3LA-10BCN	AS4C512M16D3LB-12BCN	AS4C512M16D3LC-10BCN AS4C512M16D3LC-12BCN	Comparison Result
Product Description	DDR3L SDRAM	DDR3L SDRAM	DDR3L SDRAM	DDR3L SDRAM	Same
Die per Package	Single Die Package	Dual Die Package	Dual Die Package	Dual Die Package	
Density/Memory Size	8Gb	8Gb	8Gb	8Gb	Same
Memory Organization	64Meg x 16 x 8 banks	64Meg x 16 x 8 banks	64Meg x 16 x 8 banks	64Meg x 16 x 8 banks	Same
Data Bus Width	16 bits	16 bits	16 bits	16 bits	Same
Row / Column Address	A[15:0] / A[9:0]	A[15:0] / A[9:0]	A[15:0] / A[9:0]	A[15:0] / A[9:0]	Same
Page Size	2KB	2KB	2KB	2KB	Same
Operating Power Supply	VDD/Q=1.35V (1.283~1.45V)				Same
DDR3 Compatibility	Yes, Backward compatible to DDR3 (VDD/Q= 1.425V ~1.575V)				Same
Operating Temperature	Commercial (0°C ≤ TC ≤ +95°C)				Same
Max. Clock Frequency	800 MHz	933 MHz, 800MHz	800 MHz	-10: 933MHz -12: 800 MHz	Rev.A,C better
Max Data Rate (MT/s)	1600 Mbps	1866 Mbps, 1600 Mbps	1600 Mbps	-10: 1866Mbps -12: 1600Mbps	Rev.A,C better
CAS Latency	11	13 for 933 MHz 11 for 800 MHz	11	13 for 933 MHz 11 for 800 MHz	Comparable
tRCD/tRP (ns)	13.75	13.91 for 933 MHz 13.75 for 800 MHz	13.75/13.75/11	13.91 for 933 MHz 13.75 for 800 MHz	Same
I/O Capacitance	CIO :2.2pF Max	CIO : 2.2pF Max	CIO : 2.2pF Max	CIO : 2.2pF Max	Same
Pin to Pin Compatible	Yes	Yes	Yes	Yes	Same
AC & DC Characteristics	Same	Same	Same	Same	Meet JEDEC
Package Dimension	96b FBGA (9 x 14 x 1.2mm)	96b FBGA (9 x 13.5 x 1.2mm)	96b FBGA (9 x 13.5 x 1.2mm)	96b FBGA (9 x 13 x 1.2mm)	Different
Package Ball Matrix	12 x 6.4 x 0.8mm	12 x 6.4 x 0.8mm	12 x 6.4 x 0.8mm	12 x 6.4 x 0.8mm	Same
Pb & Halogen Free	Yes	Yes	Yes	Yes	Same

AS4C512M16D3L-12BIN vs AS4C512M16D3LA-10BIN vs AS4C512M16D3LB-12BIN vs AS4C512M16D3LC-xxBIN Comparison

Part Number & result Parameter	AS4C512M16D3L-12BIN MT41K512M16HA-125IT	AS4C512M16D3LA-10BIN	AS4C512M16D3LB-12BIN	AS4C512M16D3LC-10BIN AS4C512M16D3LC-12BIN	Comparison Result
Product Description	DDR3L SDRAM	DDR3L SDRAM	DDR3L SDRAM	DDR3L SDRAM	Same
Die per Package	Single Die Package	Dual Die Package	Dual Die Package	Dual Die Package	
Density/Memory Size	8Gb	8Gb	8Gb	8Gb	Same
Memory Organization	64Meg x 16 x 8 banks	64Meg x 16 x 8 banks	64Meg x 16 x 8 banks	64Meg x 16 x 8 banks	Same
Data Bus Width	16 bits	16 bits	16 bits	16 bits	Same
Row / Column Address	A[15:0] / A[9:0]	A[15:0] / A[9:0]	A[15:0] / A[9:0]	A[15:0] / A[9:0]	Same
Page Size	2KB	2KB	2KB	2KB	Same
Operating Power Supply	VDD/Q=1.35V (1.283~1.45V)				Same
DDR3 Compatibility	Yes, Backward compatible to DDR3 (VDD/Q= 1.425V ~1.575V)				Same
Operating Temperature	Industrial (-40°C ≤ TC ≤ +95°C)				Same
Max. Clock Frequency	800 MHz	933 MHz, 800MHz	800 MHz	-10: 933MHz -12: 800 MHz	Rev.A,C better
Max Data Rate (MT/s)	1600 Mbps	1866 Mbps, 1600 Mbps	1600 Mbps	-10: 1866Mbps -12: 1600Mbps	Rev.A,C better
CAS Latency	11	13 for 933 MHz 11 for 800 MHz	11	13 for 933 MHz 11 for 800 MHz	Comparable
tRCD / tRP (ns)	13.75	13.91 for 933 MHz 13.75 for 800 MHz	13.75/13.75/11	13.91 for 933 MHz 13.75 for 800 MHz	Same
I/O Capacitance	CIO :2.2pF Max	CIO : 2.2pF Max	CIO : 2.2pF Max	CIO : 2.2pF Max	Same
Pin to Pin Compatible	Yes	Yes	Yes	Yes	Same
AC & DC Characteristics	Same	Same	Same	Same	Meet JEDEC
Package Dimension	96b FBGA (9 x 14 x 1.2mm)	96b FBGA (9 x 13.5 x 1.2mm)	96b FBGA (9 x 13.5 x 1.2mm)	96b FBGA (9 x 13 x 1.2mm)	Different
Package Ball Matrix	12 x 6.4 x 0.8mm	12 x 6.4 x 0.8mm	12 x 6.4 x 0.8mm	12 x 6.4 x 0.8mm	Same
Pb & Halogen Free	Yes	Yes	Yes	Yes	Same