

AS4C512M16D3LA-10BCN vs K4B8G1646D-MYK0 Comparison

Part Number & result Parameter	AS4C512M16D3LA-10BCN	K4B8G1646D-MYK0	Comparison Result
Product Description	DDR3L SDRAM	DDR3L SDRAM	Same
Density/Memory Size	8Gb	8Gb	Same
Memory Organization	64Meg x 16 x 8 banks	64Meg x 16 x 8 banks	Same
Data Bus Width	16 bits	16 bits	Same
Row / Column Address	A[15:0] / A[9:0]	A[15:0] / A[9:0]	Same
Page Size	2KB	2KB	Same
Operating PowerSupply	VDD/Q=1.35V (1.283~1.45V)	VDD/Q=1.35V (1.283~1.45V)	Same
DDR3 Compatibility	Yes (VDD/Q= 1.425V ~1.575V)	Yes (VDD/Q= 1.425V ~1.575V)	Same
Operating Temperature	Commercial (0°C ≤ TC ≤ +95°C)	Commercial (0°C ≤ TC ≤ +95°C)	Same
Max. Clock Frequency	933 Mhz	800 Mhz	Alliance Better
Max Data Rate (MT/s)	1866 Mbps	1600 Mbps	Alliance Better
tRCD/tRP/CL (ns)	13.91/13.91/13	13.75/13.75/11	Alliance Better
I/O Capacitance	CIO :2.2pF Max	CIO : 2.2pF Max	Same
Pin to Pin Compatible	Single ODT, CKE, ZQ & CS\ pin	Dual ODT, CKE, ZQ & CS\ pins	Alliance Better
Die per Package	Dual Die Part	Dual Die Part	Same
AC/DC Characteristics	Same	Same	Meet JEDEC
Package	96b FBGA (9mm x 13.5mm)	96b FBGA (7.5mm x 13.3mm)	Comparable. Ball Matrix Same
Package Material	Pb and Halogen Free	Pb and Halogen Free	Same

Pin Out Comparison

AS4C512M16D3LA-10BCN

K4B8G1646D-MYK0

	1	2	3	4	5	6	7	8	9	
A	V _{DDQ}	DQU5	DQU7				DQU4	V _{DDQ}	V _{SS}	A
B	V _{SSQ}	V _{DD}	V _{SS}				DQSU	DQU6	V _{SSQ}	B
C	V _{DDQ}	DQU3	DQU1				DQSU	DQU2	V _{DDQ}	C
D	V _{SSQ}	V _{DDQ}	DMU				DQU0	V _{SSQ}	V _{DD}	D
E	V _{SS}	V _{SSQ}	DQL0				DML	V _{SSQ}	V _{DDQ}	E
F	V _{DDQ}	DQL2	DQSL				DQL1	DQL3	V _{SSQ}	F
G	V _{SSQ}	DQL6	DQSL				V _{DD}	V _{SS}	V _{SSQ}	G
H	V _{REFDQ}	V _{DDQ}	DQL4				DQL7	DQL5	V _{DDQ}	H
J	NC	V _{SS}	RAS				CK	V _{SS}	NC	J
K	ODT	V _{DD}	CAS				CK	V _{DD}	CKE	K
L	NC	CS	WE				A10/AP	ZQ	NC	L
M	V _{SS}	BA0	BA2				A15	V _{REFCA}	V _{SS}	M
N	V _{DD}	A3	A0				A12/BC	BA1	V _{DD}	N
P	V _{SS}	A5	A2				A1	A4	V _{SS}	P
R	V _{DD}	A7	A9				A11	A6	V _{DD}	R
T	V _{SS}	RESET	A13				A14	A8	V _{SS}	T

	1	2	3	4	5	6	7	8	9	
A	V _{DDQ}	DQU5	DQU7				DQU4	V _{DDQ}	V _{SS}	A
B	V _{SSQ}	V _{DD}	V _{SS}				DQSU	DQU6	V _{SSQ}	B
C	V _{DDQ}	DQU3	DQU1				DQSU	DQU2	V _{DDQ}	C
D	V _{SSQ}	V _{DDQ}	DMU				DQU0	V _{SSQ}	V _{DD}	D
E	V _{SS}	V _{SSQ}	DQL0				DML	V _{SSQ}	V _{DDQ}	E
F	V _{DDQ}	DQL2	DQSL				DQL1	DQL3	V _{SSQ}	F
G	V _{SSQ}	DQL6	DQSL				V _{DD}	V _{SS}	V _{SSQ}	G
H	V _{REFDQ}	V _{DDQ}	DQL4				DQL7	DQL5	V _{DDQ}	H
J	ODT1	V _{SS}	RAS				CK	V _{SS}	CKE1	J
K	ODT0	V _{DD}	CAS				CK	V _{DD}	CKE0	K
L	CS1	CS0	WE				A10/AP	ZQ0	ZQ1	L
M	V _{SS}	BA0	BA2				NC	V _{REFCA}	V _{SS}	M
N	V _{DD}	A3	A0				A12/BC	BA1	V _{DD}	N
P	V _{SS}	A5	A2				A1	A4	V _{SS}	P
R	V _{DD}	A7	A9				A11	A6	V _{DD}	R
T	V _{SS}	RESET	A13				A14	A8	V _{SS}	T

Additional Pins to select individual die.

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Summary:

- Part# AS4C512M16D3LA-10BCN is a better part to replace Part# K4B8G1646D-MYK0.
- Processor/Controller should ignore additional pins to use Alliance Part#