



Product Change Notification (PCN)

Date: 4 January 2021

PCN TRACKING NO: PCN# 20210104/SM

Subject: Product Change Notification (PCN) for Alliance **2G DDR3 'B' DIE SDRAMs**

Description of Change:	Product will only be offered in 'C' die option
Reason for Change	Wafer die shrink from 30nm & 38nm to 25nm process technology
Traceability, Guidelines (lot, date code, markings, shipment date)	Traceable through marketing part number
Datasheet	'C' dies part alternatives already on website and can be found at https://www.alliancememory.com/products/double-data-rate-3-ddr3/
Summary of Alternative between 'B' dies and 'C' die	See table 1 Below

Table 1 - 2Gb DDR3

Density	Organization	Alliance Part Number	Alliance Alternative Part Number to use
2Gb	128M x 16	AS4C128M16D3B-12BCN	AS4C128M16D3C-93BCN
2Gb	128M x 16	AS4C128M16D3B-12BCNTR	AS4C128M16D3C-93BCNTR
2Gb	128M x 16	AS4C128M16D3LB-12BCN	AS4C128M16D3LC-12BCN
2Gb	128M x 16	AS4C128M16D3LB-12BCNTR	AS4C128M16D3LC-12BCNTR
2Gb	128M x 16	AS4C128M16D3LB-12BIN	AS4C128M16D3LC-12BIN
2Gb	128M x 16	AS4C128M16D3LB-12BINTR	AS4C128M16D3LC-12BINTR
2Gb	128M x 16	NEW OPTION - AUTOMOTIVE	AS4C128M16D3LC-12BAN
2Gb	128M x 16	NEW OPTION - AUTOMOTIVE	AS4C128M16D3LC-12BANTR
2Gb	256M x 8	AS4C256M8D3LB-12BCN	AS4C256M8D3LC-12BCN
2Gb	256M x 8	AS4C256M8D3LB-12BCNTR	AS4C256M8D3LC-12BCNTR
2Gb	256M x 8	AS4C256M8D3LB-12BIN	AS4C256M8D3LC-12BIN
2Gb	256M x 8	AS4C256M8D3LB-12BINTR	AS4C256M8D3LC-12BINTR
2Gb	256M x 8	NEW OPTION - AUTOMOTIVE	AS4C256M8D3LC-12BAN
2Gb	256M x 8	NEW OPTION - AUTOMOTIVE	AS4C256M8D3LC-12BANTR

Last Time Buy Date:	June 30th, 2021
Last Time Ship Date:	September 30th, 2021
Sample Availability Date for 'C' die parts	Existing - Parts already in Production
PCN Effective Date	January 04, 2021

*Any orders after 30 June 2021 are Non-Cancelable/Non-Returnable and cannot be changed. Products cannot be returned in stock rotation after this date.



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Dear Valued Customer:

This letter provides End-of-Life (EOL) notice of products for Alliance Memory 2Gb 'B' DIE DDR3 SDRAMs both 1.5V & 1.35V for 128Mx16 (96-ball FBGA) configurations and 1.35V 256Mx8 (78-ball FBGA) due to die shrink. Alternatives to these products will continue to be offered in the 'C' die already in mass production.

The delivery deadline is **September 30th, 2021** with last time buy (LTB) deadline **on June 30th, 2021**. Please note that the standard shipment dates will apply in general and extended delivery dates must be pre-arranged and accepted in writing by Alliance Memory Management.

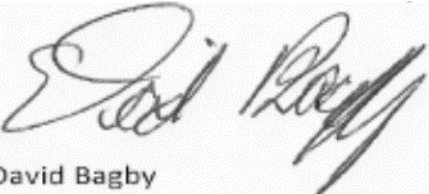
Regarding the replacement, Alliance Memory can continue to provide 25nm technology product line-up (refer to *Table 1* above).

Samples are now available for customers to start verification procedures.

We provide product comparisons within the pages that follow this PCN#20210104/SM.

Please contact your local Alliance Memory representative if you have any questions regarding this information

Yours faithfully



David Bagby
President
Alliance Memory Inc.



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President
Alliance Memory Inc.

AS4C128M16D3B-12BCN vs AS4C128M16D3C-93BCN Comparison

Part Number & result Parameter	AS4C128M16D3B -12BCN/TR	AS4C128M16D3C-93BCN/TR	Comments
Product Description	DDR3 SDRAM		Same
Process Technology	30nm	25nm	rev.C Better
Capacity	2Gb (128M x 16)		Same
Memory Org.	16M words, x16 bits, x8 banks		Same
Operating Power Supply	$V_{DD} \& V_{DDQ} = 1.5V (+/-0.075V)$		Same
Operating Temperature	Commercial (Tc = 0°C to 95°C)	Commercial (Tc = 0°C to 95°C)	Same
Clock Frequency	800MHz	1066MHz	rev.C better
Data Rate (MT/s)	1600	2133	rev.C better
CAS Latency	11	14	rev.C better
tRCD & tRP (ns)	13.75	13.09	rev.C better
Average Refresh Period	7.8µs at -40°C ≤ Tc ≤ +85°C	7.8µs at 0°C ≤ Tc ≤ +85°C	Same
I/O Capacitance	Comparable		Same
Pin Compatibility	Pin to Pin Compatible		Same
AC/DC Characteristics	Comparable		Meet JEDEC
IDD Spec conditions	0C to 95C @ 800Mhz	0C to 95C @1066Mhz	
I_{DD0} (mA)	70	85	Comparable
I_{DD1} (mA)	80	95	Comparable
I_{DD2P0} (mA)	15	21	Comparable
I_{DD2P1} (mA)	22	33	Comparable
I_{DD2N/2Q} (mA)	35	50	Comparable
I_{DD3P} (mA)	35	50	Comparable
I_{DD3N} (mA)	53	63	Comparable
I_{DD4R} (mA)	155	185	Comparable
I_{DD4W} (mA)	160	190	Comparable
I_{DD5B} (mA)	145	165	Comparable
I_{DD6} (mA)	15	20	Comparable
I_{DD6ET} (mA)	17	25	Comparable
I_{DD7} (mA)	240	280	Comparable
I_{DD8} (mA)	14	19	Comparable
Package 96b FBGA	8 x 13 x 1.0mm BallArray: 12 x 6.4 x 0.8mm	7.5 x 13 x 1.0mm BallArray: 12 x 6.4 x 0.8mm	Comparable

AS4C128M16D3LB-12BCN/BIN vs AS4C128M16D3LC-12BCN/BIN
Comparison

Part Number & result Parameter	AS4C128M16D3LB - 12BCN/TR	AS4C128M16D3LB - 12BIN/TR	AS4C128M16D3LC-12BCN/TR AS4C128M16D3LC-12BIN/TR
Product Description	DDR3L SDRAM		
Process Technology	30nm	38nm	25nm
Capacity	2Gb (128M x 16)		
Memory Org.	16M words, x16 bits, x8 banks		
Operating Power Supply	$V_{DD} \& V_{DDQ} = 1.35V(1.283V \text{ to } 1.45V)$		
DDR3 Compatibility	Backward Compatible to DDR3 SDRAM (1.5V +/-0.075)		
Operating Temperature	Commercial (Tc = 0°C to 95°C)	Industrial (Tc = -40°C to 95°C)	Commercial (Tc = 0°C to 95°C) Industrial (Tc = -40°C to 95°C)
Clock Frequency	800MHz	800MHz	800MHz
Data Rate (MT/s)	1600	1600	1600
CAS Latency	11	11	11
tRCD & tRP (ns)	13.75	13.75	13.75
Average Refresh Period	7.8µs at -40°C ≤ Tc ≤ +85°C 3.9us at +85°C ≤ TC ≤ +95°C		7.8µs at -40°C ≤ Tc ≤ +85°C 3.9us at +85°C ≤ TC ≤ +95°C
I/O Capacitance	Comparable		
Pin Compatibility	Pin to Pin Compatible		
AC/DC Characteristics	Same		
IDD Spec conditions	0C to 95C	-40C to 95C	-40C to 95C
IDD0 (mA)	67	75	70
IDD1 (mA)	76	96	80
IDD2P0 (mA)	12	12	15
IDD2P1 (mA)	20	12	22
IDD2N/2Q (mA)	32	45	35
IDD3P (mA)	32	20	35
IDD3N (mA)	45	52	55
IDD4R (mA)	150	188	155
IDD4W (mA)	155	189	160
IDD5B (mA)	135	222	145
IDD6 (mA)	12	15	15
IDD6ET (mA)	14	19	20
IDD7 (mA)	220	275	240
IDD8 (mA)	13	12	14
Package 96b FBGA	8 x 13 x 1.0mm BallArray: 12 x 6.4 x 0.8mm	9 x 13 x 1.2mm BallArray:12 x 6.4 x 0.8mm	7.5 x 13 x 1.0mm BallArray: 12 x 6.4 x 0.8mm

AS4C256M8D3LB-12BCN/BIN vs AS4C256M8D3LC-12BCN/BIN Comparison

Part Number & result Parameter	AS4C256M8D3LB -12BCN/TR AS4C256M8D3LB -12BIN/TR	AS4C256M8D3LC-12BCN/TR AS4C256M8D3LC-12BIN/TR	Comments
Product Description	DDR3L SDRAM		
Process Technology	38nm	25nm	rev.C Better
Capacity	2Gb (256M x 8)		Same
Memory Org.	32M words, x8 bits, x8 banks		Same
Operating Power Supply	V_{DD} & $V_{DDQ} = 1.35V(1.283V \text{ to } 1.45V)$		Same
DDR3 Compatibility	Backward Compatible to DDR3 SDRAM (1.5V +/-0.075)		Same
Operating Temperature	Commercial (Tc = 0°C to 95°C) Industrial (Tc = -40°C to 95°C)	Commercial (Tc = 0°C to 95°C) Industrial (Tc = -40°C to 95°C)	Same
Clock Frequency	800MHz	800MHz	Same
Data Rate (MT/s)	1600	1600	Same
CAS Latency	11	11	Same
tRCD & tRP (ns)	13.75	13.75	Same
Average Refresh Period	7.8μs at -40°C ≤ Tc ≤ +85°C 3.9us at +85°C ≤ TC ≤ +95°C	7.8μs at -40°C ≤ Tc ≤ +85°C 3.9us at +85°C ≤ TC ≤ +95°C	Same
I/O Capacitance	Comparable		Same
Pin Compatibility	Pin to Pin Compatible		Same
AC/DC Characteristics	Same		Meet JEDEC
IDD Spec conditions	-40C to 95C	-40C to 95C	Same
I_{DD0} (mA)	62	70	Comparable
I_{DD1} (mA)	75	80	Comparable
I_{DD2P0} (mA)	12	15	Comparable
I_{DD2P1} (mA)	12	22	Comparable
I_{DD2N/2Q} (mA)	43/42	35	Comparable
I_{DD3P} (mA)	14	35	Comparable
I_{DD3N} (mA)	48	55	Comparable
I_{DD4R} (mA)	121	155	Comparable
I_{DD4W} (mA)	129	160	Comparable
I_{DD5B} (mA)	222	145	Comparable
I_{DD6} (mA)	15	15	Comparable
I_{DD6ET} (mA)	19	20	Comparable
I_{DD7} (mA)	211	240	Comparable
I_{DD8} (mA)	12	14	Comparable
Package 78b FBGA	8 x 10.5 x 1.2mm Ball Array:9.6 x 6.4 x 0.8mm	7.5 x 10.5 x 1.0mm Ball Array: 9.6 x 6.4 x 0.8mm	Comparable