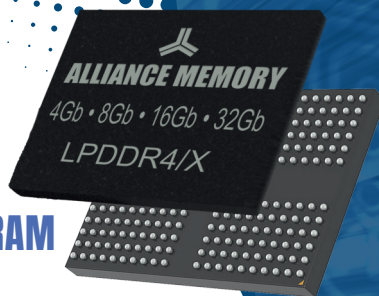


LPDDR4/X SDRAM



FEATURES

VDD1/VDD2/VDDQ = 1.8V/1.1V/0.6V (LPDDR4X)

VDD1/VDD2/VDDQ = 1.8V/1.1V/1.1V (LPDDR4)

Bidirectional Data strobes

Differential clock inputs and data strobed

Programmable READ and Write latencies

Programmable and OTF Burst Lengths

Burst Type: Sequential

Auto pre-charge for each burst access

Configurable Drive Strength

Refresh and Self-Refresh modes

Partial Array Self Refresh

Temperatures Compensated Self Refresh

- **Densities :**
 - 2Gb, 4Gb, 8Gb, 16Gb & 32Gb
- **Frequency :**
 - 2.13 GHz / 1.86 GHz / 1.60 GHz
- **Bus Widths :**
 - x16 & x32
- **Package :**
 - 200 ball FBGA
- **Data Rate :**
 - 4.26Gbps, 3.73Gbps & 3.20Gbps
- **Temperature :**
 - -40°C to 95°C
 - -40°C to 105°C

Alliance Memory Inc.

+1(425)898-4456

info@alliancememory.com

www.alliancememory.com



Why Engage with Alliance Memory?

- ▶ Strong Supply Chain Strategy (Multiple manufacturing sites)
- ▶ Great customer service and support (Initial Response <24hrs)
- ▶ Improved Lead times on average 4-8 weeks. Industry Best
- ▶ pin-to-pin drop-in replacements to mainstream suppliers
- ▶ Balanced Inventory Management (US & Taiwan)
- ▶ Minimal or No Die Shrinks, Long-term Support
- ▶ Competitive and Stable Pricing
- ▶ Quick sample turnaround

LONGEVITY

Write Leveling

CA Calibration

Internal VREF and VREF training

FIFO based write / read training

Multipurpose Command

Dynamic ODT

Support non-target DRAM ODT control

Data Mask Inversion pin support

16n bits pre-fetched

Directed per bank refresh

On-Chip ECC (2Gb ~ 8Gb)

JEDEC compliant

2024

2025

2026

2027

2028

2029

2030

2031

2032

2033

CROSS REFERENCE

Density	Alliance MPN	Micron	Samsung	Hynix	Nanya	ISSI	Winbond
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LPDDR4

2Gb (x16)	AS4C128M16MD4	MT53E128M16		H9HCNNNB	NT6AN128M16	IS43LQ16128 IS46LQ16128	W66BL/P6NB
2Gb (x32)	AS4C64M32MD4					IS43LQ32640 IS46LQ32640	W66CL/P2NQ
4Gb (x16)	AS4C256M16MD4	MT53E256M16		H9HCNNN4	NT6AN256M16	IS43/46LQ16256	W66CL/P6NB
4Gb (x32)	AS4C128M32MD4	MT53B128M32	K4F4E3S4HF		NT6AN128T32	IS43/46LQ32128	W66CL/P2NQ
8Gb (x32)	AS4C256M32MD4	MT53B256M32	K4F8E3O4HB	H9HCNNN8	NT6AN256T32	IS43/46LQ32256	W66DL/P2NQ

LPDDR4X

2Gb (x16)	AS4C128M16MD4V					IS43/46LQ16128	W66BQ6NBU
4Gb (x16)	AS4C256M16MD4V	MT53E256M16	K4U8E3S4AD	H9HCNNN4	NT6AP256M16	IS43/46LQ16256	W66CQ6NQU
8Gb (x32)	AS4C256M32MD4V	MT53B256M32	K4U8E3S4Ax		NT6AP256T32	IS43/46LQ32256	W66DQ2NQU
8Gb (x16)	AS4C512M16MD4V	MT53D512M16			NT6AP512M16	IS43LQ16512AL	
16Gb (x16)	AS4C1G16MD4V	MT53E1G16			NT6AT1024M16		
16Gb (x32)	AS4C512M32MD4V	MT53D512M32	K4U6E3S4Ax	H9HCNNNB	NT6AP512T32		
32Gb (x32)	AS4C1G32MD4V	MT53D1024M32 MT53E1G32	K4UBE3D4Ax	H9HCNNNCP	NT6AP1024F32		

Processor compatible memory interface

NXP

- i.MX 93x
- i.MX 8M Dual Lite
- i.MX 8M Quad Lite
- i.MX 8M Plus

- i.MX 8M mini
- i.MX 8M Nano
- i.MX 8X Lite
- i.MX 8 Dual / Quad
- S32G / S32Z / S32E

INTEL

- eASIC N5X

XILINX

- Versal
- Zynq Ultrascale+

TEXAS INST

- DRA80X
- DRA829
- TDA4VM

Lattice

- CertusPro-NX

Renesas

- R-Car V3U
- R-Car V3H
- R-Car V3M
- R-Car S4/N

- R-Car H3
- R-Car M3
- R-Car E3

Synaptics

- VS-450
- VS-680
- VS-640

MediaTek

- MT8395
- MT8385
- MT8365

Ambarella

- CV72
- CV52
- CV5
- CV2FS

- CV22FS
- CV28
- CV25M
- H32

- H22
- S6LM