

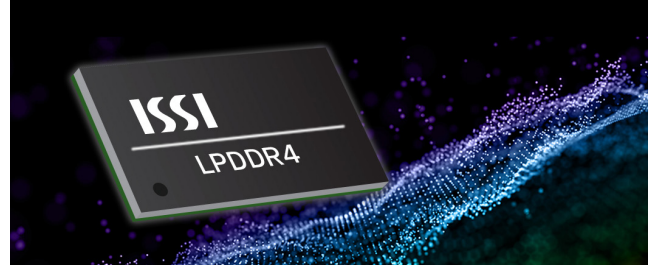


Long-Term Support  
World Class Quality

# LPDDR4/4X SDRAM

## ISSI LPDDR4/4X Product Features:

- Low voltage core and I/O:  
VDD1 = 1.8V  
VDD2 = 1.1V  
VDDQ = 1.1V (LPDDR4) or 0.6V (LPDDR4X)
- Frequency range:  
10MHz to 2133MHz [date rate range: 20MT/s to 4266MT/s per I/O]
- 8 internal banks per channel for concurrent operation
- Programmable Read and Write Latencies
- Programmable and on-the-fly burst length [BL = 16 or 32]
- Temperature Sensor for efficient Self-Refresh control
- Adjustable Drive Strength



- Partial Array Self Refresh (PASR)
- Long-term Support
- Packages:  
200-ball BGA [single/dual channel]  
100-ball BGA [single channel]

## ISSI LPDDR4 Ordering Options

Den.	Speeds [MT/s]	Part No.	Org.	Pkg.	Ordering Options	Status
1G	3200	IS43/46LQ16640A	Single channel [1 x16]	BGA[200], BGA[100]	-062BLx, -062BSLx	S=Q2/25
2G	3200	IS43/46LQ16128A	Single channel [1 x16]	BGA[200], BGA[100]	-062TBLx, -062BLx, -062BSLx	Prod
	3200	IS43/46LQ32640A	Two channel [2 x16]	BGA[200]	-062TBLx, -062BLx	Prod
4G	3200	IS43/46LQ16256A	Single channel [1 x16]	BGA[200]	-062TBLx, -062BLx	Prod
	3733, 3200	IS43/46LQ16256B	Single channel [1 x16]	BGA[200], BGA[100]	-053BLx, -062BLx, -053BSLx, -062BSLx	Prod
	4266, 3733	IS43/46LQ16256C	Single channel [1 x16]	BGA[200], BGA[100]	-046BLx, -053BLx, -046BSLx, -053BSLx	S=Q2/25
8G	3200	IS43/46LQ32128A	Two channel [2 x16]	BGA[200]	-062TBLx, -062BLx	Prod
	3733, 3200	IS43/46LQ16512A	Single channel [1 x16]	BGA[200]	-053BLx, -062BLx	Prod
	4266, 3733	IS43/46LQ16512B	Single channel [1 x16]	BGA[200]	-046BLx, -053BLx	S=Q1/25
16G	3200	IS43/46LQ32256A	Two channel [2 x16]	BGA[200]	-062BLx	Prod
	3733, 3200	IS43/46LQ32256B	Two channel [2 x16]	BGA[200]	-053BLx, -062BLx	Prod
	4266, 3733	IS43/46LQ32512A	Two channel [2 x16]	BGA[200]	-046BLx, -053BLx	S=Q1/25
32G	4266, 3733	IS43/46LQ32K01S2A	Two channel [2 x16], Two Rank	BGA[200]	-046BLx, -053BLx	S=Q1/25

## ISSI LPDDR4X Ordering Options

Den.	Speeds [MT/s]	Part No.	Org.	Pkg.	Ordering Options	Status
1G	3733, 3200	IS43/46LQ16640AL	Single channel [1 x16]	BGA[200], BGA[100]	-053BLx, -062BLx, -053BSLx, -062BSLx	S=Q2/25
2G	3200	IS43/46LQ16128AL	Single channel [1 x16]	BGA[200], BGA[100]	-062TBLx, -062BLx, -062BSLx	Prod
	3200	IS43/46LQ32640AL	Two channel [2 x16]	BGA[200]	-062TBLx, -062BLx	Prod
4G	3200	IS43/46LQ16256AL	Single channel [1 x16]	BGA[200]	-062TBLx, -062BLx	Prod
	3733, 3200	IS43/46LQ16256BL	Single channel [1 x16]	BGA[200], BGA[100]	-053BLx, -062BLx, -053BSLx, -062BSLx	Prod
	4266, 3733	IS43/46LQ16256C	Single channel [1 x16]	BGA[200], BGA[100]	-046BLx, -053BLx, -046BSLx, -053BSLx	S=Q2/25
8G	3200	IS43/46LQ32128AL	Two channel [2 x16]	BGA[200]	-062TBLx, -062BLx	Prod
	4266, 3733	IS43/46LQ16512BL	Single channel [1 x16]	BGA[200]	-046BLx, -053BLx	S=Q1/25
	3200	IS43/46LQ32256AL	Two channel [2 x16]	BGA[200]	-062TBLx, -062BLx	Prod
16G	3733, 3200	IS43/46LQ32256BL	Two channel [2 x16]	BGA[200]	-053BLx, -062BLx	Prod
	4266, 3733	IS43/46LQ32512A	Two channel [2 x16]	BGA[200]	-046BLx, -053BLx	S=Q1/25
32G	4266, 3733	IS43/46LQ32K01S2A	Two channel [2 x16], Two Rank	BGA[200]	-046BLx, -053BLx	S=Q1/25

### Notes:

1. S = Availability timeframe for Samples
2. Industrial Grade Options begin with "IS43", Automotive Grade Options begin with "IS46".
3. TBLx or BLx: 200-ball; [T]BL1 = -40°C to 95°C, [T]BLA1 = -40°C to 95°C, [T]BLA2 = -40°C to 105°C, [T]BLA3 = -40°C to 125°C
4. BSLx: 100-ball; BSL1 = -40°C to 95°C, BSLA1 = -40°C to 95°C, BSLA2 = -40°C to 105°C, BSLA3 = -40°C to 125°C
5. Some LPDDR4 part numbers also support LPDDR4X
6. Not all ordering combinations may be available. Please contact ISSI for part number availability.



## ISSI LPDDR4 Ordering Options with ECC

Den.	Speeds	Part No.	Org.	Pkg.	Ordering Options	Status
2G	3200MT/s	IS43/46LQ16128EA	Single channel [1 x16]	BGA(200)	-062TB2Lx, -062B2Lx	Prod
	3200MT/s	IS43/46LQ32640EA	Two channel [2 x16]	BGA(200)	-062TB2Lx, -062B2Lx	Prod
4G	3200MT/s	IS43/46LQ16256EA	Single channel [1 x16]	BGA(200)	-062TB2Lx, -062B2Lx	Prod
	3200MT/s	IS43/46LQ32128EA	Two channel [2 x16]	BGA(200)	-062TB2Lx, -062B2Lx	Prod
8G	3200MT/s	IS43/46LQ32256EA	Two channel [2 x16]	BGA(200)	-062B2Lx	Prod

## ISSI LPDDR4X Ordering Options with ECC

Den.	Speeds	Part No.	Org.	Pkg.	Ordering Options	Status
2G	3200MT/s	IS43/46LQ16128EAL	Single channel [1 x16]	BGA(200)	-062TB2Lx, -062B2Lx	Prod
	3200MT/s	IS43/46LQ32640EAL	Two channel [2 x16]	BGA(200)	-062TB2Lx, -062B2Lx	Prod
4G	3200MT/s	IS43/46LQ16256EAL	Single channel [1 x16]	BGA(200)	-062TB2Lx, -062B2Lx	Prod
	3200MT/s	IS43/46LQ32128EAL	Two channel [2 x16]	BGA(200)	-062TB2Lx, -062B2Lx	Prod
8G	3200MT/s	IS43/46LQ32256EAL	Two channel [2 x16]	BGA(200)	-062B2Lx	Prod

**Notes:**

1. S = Availability timeframe for Samples
2. Industrial Grade Options begin with "IS43", Automotive Grade Options begin with "IS46".
3. TBLx or BLx: 200-ball; [T]BLI = -40°C to 95°C, [T]BLA1 = -40°C to 95°C, [T]BLA2 = -40°C to 105°C, [T]BLA3 = -40°C to 125°C
4. Not all ordering combinations may be available. Please contact ISSI for part number availability.

## Additional ISSI Mobile DRAM Options

Mobile DRAM	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb	2Gb	4Gb	8Gb	16Gb	32Gb
Mobile SDRAM (1.8V/2.5V/3.3V)	✓	✓	✓	✓	✓						
LPDDR	✓	✓	✓	✓	✓	✓	✓				
LPDDR2				✓	✓	✓	✓	✓	✓		