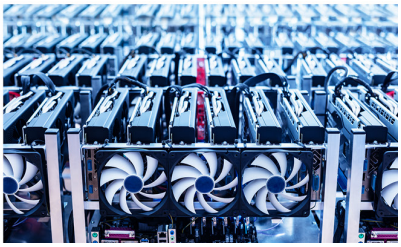
Micron® GDDR6 Memory

Highest-Performance, Highest-Bandwidth GDDR6



High-performance computing (HPC), gaming, automotive and networking applications are demanding higher-performing solutions to keep pace with their ever-increasing bandwidth requirements. Micron® GDDR6 memory addresses this need, continuing the successful path of increasing I/O speed in traditional DDR package design.

Originally designed for graphics processing, GDDR6 is a high-performance memory solution that delivers faster data packet processing and buffering via 32 DQs per component and data rates up to 16 Gb/s. That's 3X to 4X the effective bandwidth compared to DDR4 and LPDDR4 devices.

GDDR6 also goes a long way in simplifying board designs, which enables you to lower your total cost of ownership (TCO) by reducing the total build of materials (BOM) and enables you to improve your time to market thanks to a simpler PCB design and fewer PCB layers.

With the long-term reliability and long-term product support offered by Micron, you can design in GDDR6 with confidence and give your networking application a performance boost.

Three Reasons to Choose Micron GDDR6

1. **High Bandwidth**
   Delivers faster data packet processing and buffering with a wide 32 DQs per component and data rates up to 16 Gb/s

2. **Simplified Board Design**
   Improves time to market with simplified PCB design and fewer PCB layers; doubles the usable space on the PCB compared to GDDR5; lowers TCO by reducing the BOM

3. **Design Ease**
   Leverages a familiar parallel memory implementation scheme like previous-generation DDR devices

Micron GDDR6

GDDR5 vs. GDDR6 Features Comparison

Feature	GDDR5	GDDR6
Density	512Mb–8Gb	8Gb–16Gb
V_{DD}, V_{DDQ}	1.5V	1.35V
Low-voltage support	1.35V	1.25V
V_{PP}	n/a	1.8V
Package	BGA-170 14mm x 12mm 0.8mm ball pitch	BGA-180 14mm x 12mm 0.75mm ball pitch
Signaling	POD15/POD135	POD135/POD125
Data rate	≤8 Gb/s	≤16 Gb/s
I/O width	x32/x16	2-channel x16/x8
Access granularity	32B	2-channel 32B each or 1-channel 64B with PC mode
I/O count	61	62/74
ABI, DBI	Yes	Yes
CRC	CRC-8 (BL8)	2X CRC8 (BL16); compressed 2X CRC-8 (BL8)
RDQS mode	Yes (BLS)	Yes (BL16)
ODT	Yes	Yes
V_{REFC}	External	External/internal
V_{REFD}	External/internal	Internal
Temperature sensor	Yes	Yes

Which Applications Are the Best Fit for GDDR6?

APPLICATION	GAMING CONSOLES	GRAPHICS CARDS	NETWORK ROUTING AND SWITCHING	AUTONOMOUS DRIVING	CRYPTO MINING CARDS AND APPLICATION-SPECIFIC IC	HPC ACCELERATION
BANDWIDTH DRIVERS	*4K resolution and improved rendering*	*4K, virtual and augmented reality, professional use, PC gaming*	*Port bandwidth/ density, mobile network, G5*	*Level 4/5 driving*	*ROI by competitive hash rates*	*Artificial intelligence and deep learning*

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