



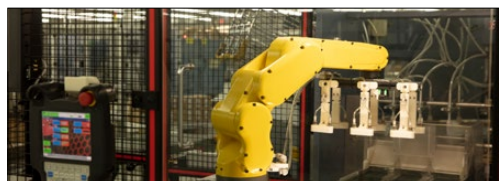
kingston.com/emmc

DRAM

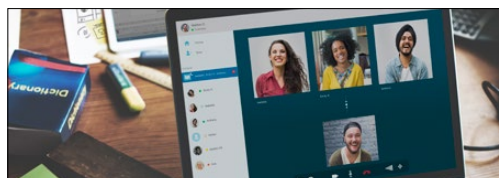
Kingston DDR3/3L DRAM for embedded applications

Kingston on-board DRAM is designed to meet the needs of embedded applications and offers a low-voltage option for lower power consumption.

MARKET SEGMENTS



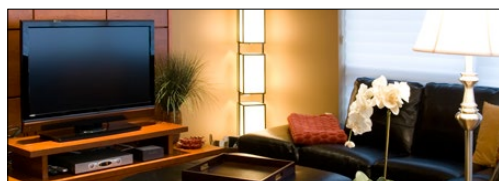
Industrial IoT / robotics & factory automation



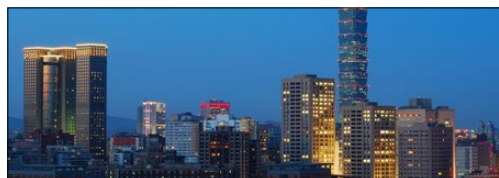
5G networking/telecommunications communication modules (Wi-Fi routers and mesh devices)



Wearables (smart watches, health monitors, AR & VR)



Smart home (sound bars, thermostats, fitness equipment, vacuums, beds, taps)



Smart city (HVAC, lighting, power monitoring/ metering, parking meters)

DDR3/3L PART NUMBERS AND SPECIFICATIONS

Part Number	Capacity	Description	Package	Configuration (Words x Bits)	Speed Mbps	VDD, VDDQ	Operating Temperature
D1216ECMDXGJD	2Gb	96 ball FBGA DDR3/3L C-Temp	7.5x13.5x1.2	128Mx16	1866 Mbps	1.35V*	0°C +95°C
D2516ECMDXGJD	4Gb	96 ball FBGA DDR3/3L C-Temp	7.5x13.5x1.2	256Mx16	1866 Mbps	1.35V*	0°C +95°C
D5128ECMDPGJD	4Gb	78 ball FBGA DDR3/3L C-Temp	7.5x10.6x1.2	512Mx8	1866 Mbps	1.35V*	0°C +95°C
D2516ECMDXGME	4Gb	96 ball FBGA DDR3/3L C-Temp	7.5x13.5x1.2	256Mx16	2133 Mbps	1.35V*	0°C +95°C
B5116ECMDXGJD	8Gb	96 ball FBGA DDR3/3L C-Temp	9x13.5x1.2	512Mx16	1866 Mbps	1.35V*	0°C +95°C

*Backward compatible to 1.5V VDD, VDDQ

KEY FEATURES

- Double Data Rate (DDR) architecture: two data transfers per clock cycle
- High-speed data transfer is realised by 8 bits prefetch pipelined architecture
- Bi-directional differential data strobe (DOS and /DQS) is transmitted/received with data for capturing data at the receiver
- DOS is edge-aligned with data for READS; centre-aligned with data for WRITES
- Differential clock inputs (CK and /CK)
- DLL aligns DQ and DOS transitions with CK transitions
- Commands entered on each positive CK edge; data and data mask referenced to both edges of DQS
- Data Mask (DM) for write data
- Posted /CAS by programmable additive latency for better command and data bus efficiency
- On-die termination (ODT for better signal quality)
 - Synchronous ODT
 - Dynamic CDT
 - Asynchronous ODT
- Multi-Purpose Register (MPR) for predefined pattern read out
- ZQ calibration for DQ drive and ODT
- Programmable Partial Array Self-Refresh (PASR)
- RESET pin for power-up sequence and reset function
- SRT range: normal/extended
- Programmable output driver impedance control

