



Introduction to K3KL8L80CM-MGCT

K3KL8L80CM-MGCT is a Samsung LPDDR5X DRAM chip, specifically a 32 Gbit (4 GB) x32 module in a 315-BGA package. It's designed for high-performance, low-power applications like mobile devices, PCs, automotive systems, and on-device AI, offering up to 7,500 Mbps data rate and significant power efficiency improvements (~25%) compared to prior generations.

Parameter

Capacity: 4GB (32 Gbit)

Type: LPDDR5X DRAM

Speed: 7,500 Mbps

Voltage: 1.8 V / 1.05 V / 0.9 V / 0.5 V

Package: 315- ball FBGA

Operating Temperature: -25° C to 85° C

Compliance: RoHS Compliant

K3KL8L80CM-MGCT Features

1. Enhanced Performance:

With transfer rates reaching 7.5 Gb/s, it's well-suited for demanding tasks like gaming, AI inference, and high-res graphics.

2. Energy Efficient:

Built on advanced process nodes, it consumes ~25% less power than the previous LPDDR5X variants, extending battery life in portable devices.

3. Automotive-Grade Reliability:

Rated AEC- Q100 and capable of operating in extreme temperatures, which makes it suitable for automotive and industrial applications

Applications

K3KL8L80CM-MGCT is mainly used in advanced smartphones, ultrabooks, automotive infotainment and ADAS systems, and on-device AI modules. It is deal for OEMs designing high-performance, energy-efficient systems.

Alternatives

Decision Matrix	
Use Case	Recommended Alternative
Highest performance	Samsung 10.7 Gbps LPDDR5X-10700
Modular flexibility	Samsung LPCAMM LPDDR5X-7500
Faster than baseline	Micron LPDDR5X 8.533 Gbps
Balanced speed & cost	SK Hynix LPDDR5T 9.6 Gbps