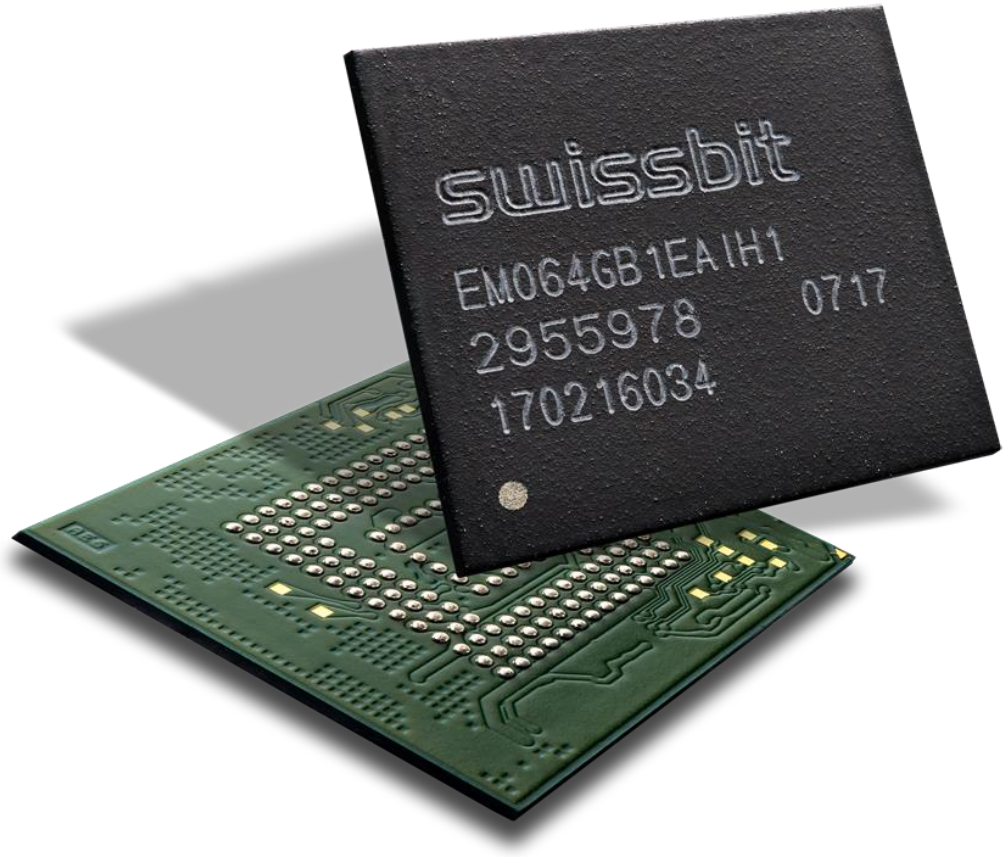
swissbit®

Product Fact Sheet

Industrial e·MMC Memory

EM-20 Series

JEDEC e·MMC 5.0 compliant,
BGA 153 ball



made in germany

Embedded MMC 5.0

EM-20 Industrial e·MMC Memory 4GB to 64GB

Main Features

- Fully compliant with JEDEC e·MMC 5.0 Standard (JESD84-B50)
- 153-ball BGA, 0.5mm pitch
  11.5 x 13mm, RoHS compliant
- MLC NAND base technology
- Multiple MLC or enhanced/reliable mode partitions user configurable according to e·MMC Spec 5.0
- High performance e·MMC 5.0 specification
  - Eleven-wire bus (clock, Data Strobe, 1 bit command, 8 bit data bus) and a hardware reset
  - Three different data bus width modes: 1-bit (default), 4-bit, and 8-bit
  - Clock frequencies 0-200MHz, High Speed Mode HS400
  - Up to 250MB/s sequential read and up to 90MB/s sequential write in MLC mode
- Power Supply: (Low-power CMOS technology)
  - VCCQ 1.7V...1.95V or 2.7V...3.6V e·MMC supply
  - VCC 2.7V...3.6V NAND Flash supply
- Optimized FW algorithms
  - Power-fail data loss protection
  - Wear Leveling technology
    Equal wear leveling of static and dynamic data. The wear leveling assures that dynamic data as well as static data is balanced evenly across the memory. With that the maximum write endurance of the device is guaranteed
  - Read Disturb Management
    The read commands per region are monitored and the content is conditionally refreshed when critical levels have occurred
  - Auto Read Refresh
    The interruptible background process maintains the user data for Read Disturb effects or Retention degradation due to high temperature effects
  - Diagnostic features with Device Health Report according to e·MMC Spec 5.0
  - Field Firmware update according to e·MMC Spec 5.0
  - Discard and Sanitize, Trim
  - Boot Operation Mode and Alternative Boot Operation Mode
  - Replay Protected Memory Block (RPMB)
- High reliability
  - Designed with sophisticated firmware architecture for industrial and embedded markets.
  - Ideal for application like POS/POI, PLC, IoT, gaming, medical and use as general boot medium for embedded applications.
  - The product is optimized for long life cycle that requires superior data retention as well as power fail safety.
  - Intensive write applications should use the enhanced/reliable mode
  - Industrial Temperature range, -40° up to 85°C
- Controlled BOM & PCN process