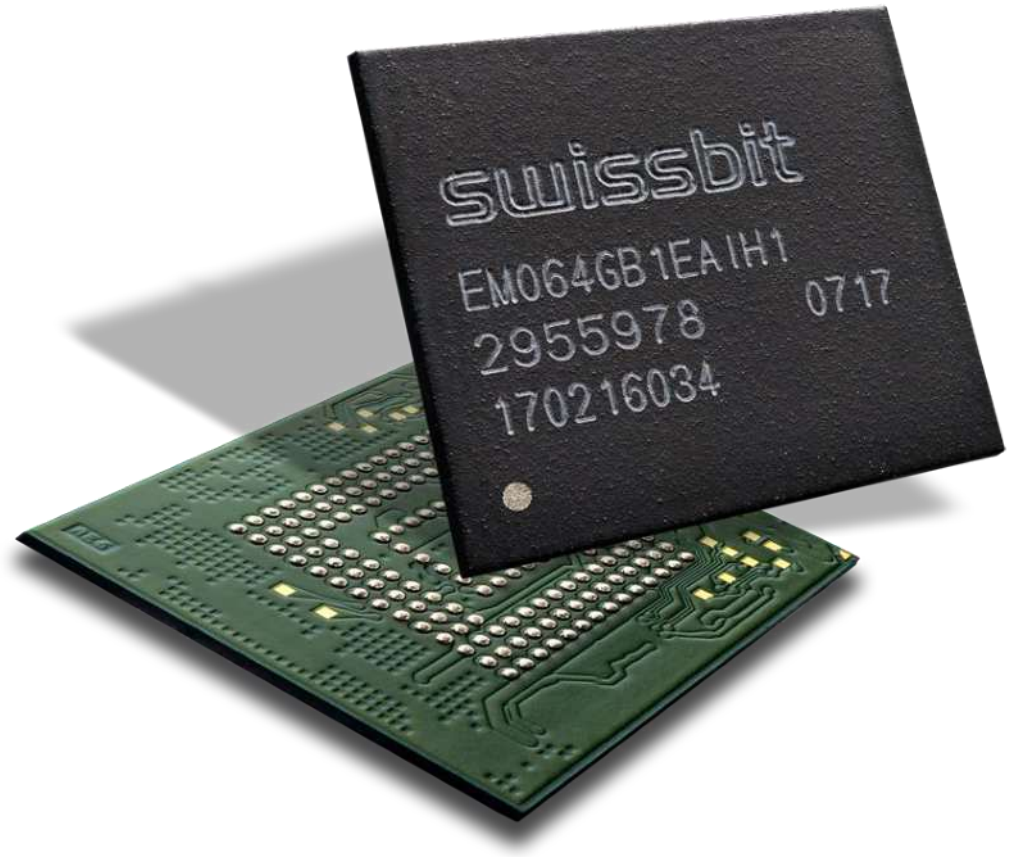
swissbit®

Product Fact Sheet

Industrial e·MMC Memory

EM-26 Series

JEDEC e·MMC 5.0 compliant,
BGA 153 ball, Enhanced Mode (pSLC)



made in germany

Embedded MMC 5.0

EM-26 Industrial e·MMC Memory 2GB to 32GB

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
- Enhanced Mode (pSLC)
- Single partition
- 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 270MB/s sequential read and up to 160MB/s sequential write
- 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.
  - Enhanced Mode (pSLC) with higher write performance and endurance than MLC configured products (EM-20).
  - 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.
  - Industrial Temperature range, -40° up to 85°C
- Controlled BOM & PCN process



Order Information for EM-26

Density	Part Number	Temp. Range	Flash Technology
2GB	SFEM4096B1EA1T0-I-GE-111-E02	-40°C to 85°C	pSLC NAND Flash
4GB	SFEM008GB1EA1T0-I-GE-111-E04		
8GB	SFEM016GB1EA1T0-I-GE-111-E08		
16GB	SFEM032GB1EA1T0-I-LF-111-E16		
32GB	SFEM064GB1EA1T0-I-HG-111-E32		

System Performance

System Performance	Typ. Sustained	Max. Enhanced Mode	Unit
Burst Data transfer Rate HS400 (max clock 200MHz)		400	MB/s
Sequential Read	178	up to 270	
Sequential Write	60	up to 160	

Current Consumption, 32GB device, HS400	Typ. ICCQ current @ VCCQ 1.8V	Typ. ICC current @ VCC 3.3V	Unit
Write	110	83	mA
Read	178	37	
Idle	-	0.2	

Physical Dimensions

Physical Dimensions	Value	Unit
Length	13±0.1	mm
Width	11.5±0.1	
Thickness	1.0 max.	

Recommended Temperature Conditions

Parameter	Min.	Typ.	Max.	Unit
Industrial Operating Temperature	-40	25	85*	°C
Storage Temperature	-40	25	85*	°C

* High temperature storage without operation reduces the data retention, in operation the data will be refreshed, if data error issues were detected.

For more information on e·MMC interface, please visit JEDEC homepage (www.jedec.org)

Why Swissbit?
Swissbit strives to create innovative technologies for future market opportunities utilizing a highly skilled in-house product research and development team. Swissbit maintains a marketing edge by continuing to manufacture world-class high quality memory products and providing customers with both high value and low cost of ownership achieved through efficient processes and procedures.