

# swissbit®

Product Fact Sheet

## Industrial microSDHC / SDXC Memory Card

### S-56u High reliability series

UHS-I Interface, 3D pSLC-mode

Extended and Industrial  
Temperature Grade

Date: August 17, 2020  
Revision: 1.02



# Product Fact Sheet

## S-56u High reliability series



### Product Summary

- **Capacities:** 4 GBytes, 8 GBytes, 16 GBytes, 32 GBytes
- **Form Factor:** Standard microSD Memory card form factor – 15.0mm x 11.0mm x 0.7mm (1.0mm)
- **Compliance<sup>1</sup>:** Fully compliant with SD Memory Card specification 6.10
  - SDHC high speed mode, UHS-I
  - Speed class 10/U3/V30/A2 according SD6.10 specification
  - SD2.0 backward compliant
  - FAT32 / exFAT preformatted
- **Environmental:** RoHS / REACH Compliant
- **Compatibility:** Support SD SPI mode
- **Performance (max. capacity):**
  - Read performance: sequential read up to 95 MBytes/s
  - Write performance: sequential write up to 80 MBytes/s
  - SDR12, SDR25, SDR50, SDR104, DDR50 mode
- **Operating Temperature Range<sup>2</sup>:**
  - Extended: -25 °C to 85 °C
  - Industrial: -40 °C to 85 °C
- **Storage Temperature Range:** -40 °C to 85 °C
- **Operating Voltage:** 2.7...3.6V
- **Data Retention<sup>3</sup>:** 10 years @ life begin; 1 year @ life end
- **Error Correction:** Advanced ECC (Error Correction Code)
  - Mean Time Between Failure (MTBF): > 2,000,000 hours
- Number of insertions: up to 20,000

### Product Features

- High performance 6.10 specification
  - SD burst up to 104MB/s
  - SD Normal speed 0...25MHz clock rate
  - SD High speed 25...50MHz clock rate
  - SD UHS-I speed 0...50MHz (DDR) and 0...208MHz (SDR)
- Power Supply: (Low-power CMOS technology)
  - 2.7...3.6V normal operating voltage
- Optimized FW algorithms especially for read/write access, highest random write performance and best endurance with long data retention.
  - Designed for usage in applications with highest requirements regarding reliability like data logging, POS/POI, Medical and other demanding use-cases.
  - Especially suitable for intensive read/write operations
  - Advanced power-off reliability technology
  - 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
  - The S-56u High Reliability Series is optimized for high read/write traffic for demanding industrial applications. The series is especially developed for high random write performance and best endurance.

<sup>1</sup> The verification of host system and storage device compatibility is in customer's responsibility. Swissbit can provide guidance and support on request.

<sup>2</sup> @Ambient temperature

<sup>3</sup> NAND Flash data retention and endurance characteristics are defined according to JEDEC JESD47 and JESD22. The endurance limits of the storage shall be monitored by the life time information and simulated before field usage by the customer.