swissbit®

Product Fact Sheet

Industrial
USB Flash Drive Module

U-58 Series
USB 3.1 SuperSpeed, pSLC

Commercial and Industrial
Temperature Grade

Date: January 26, 2023
Revision: 1.01

Made in Germany

Product Summary

- **Capacities:** 8 GBytes, 16 GBytes
- **Form Factor:**
  - USB3.1 solid state flash drive for internal 9(10)-pin USB connector terminal (26.65mm x 36.8mm)
  - 2.54mm or 2.00mm connector with keyed pin9
- **Compliance:** USB 3.1 Gen 1 SuperSpeed specification compatible (backward compliance with USB 2.0/1.1)
- **Performance:**
  - Read Performance: Sequential Read up to 180 MBytes/s, Random Read IOPS up to 4,100
  - Write Performance: Sequential Write up to 76 MBytes/s, Random Write IOPS up to 1,680
- **Operating Temperature Range[1]:**
  - Commercial: 0 °C to 70 °C
  - Industrial: -40 °C to 85 °C
- **Storage Temperature Range:** -40 °C to 85 °C
- **Operating Voltage:** 3.3V ±5% or 5V ± 10%
- **Data Retention:** 10 Years @ Life Begin; 1 Year @ Life End
- **Endurance in TeraBytes Written (TBW) @ Max Capacity[2]:**
  - Enterprise Workload $\geq$ 67.2
- **Shock/Vibration:** 1,500 g / 50 g
- **High-Performance 32-Bit Processor with Integrated, Parallel Flash Interface Engines:**
  - Triple-Level Cell (TLC) 3D NAND Flash in pSLC mode
  - Hardware BCH Code ECC (up to 60bit correction per 1 KByte page)
- **High Reliability:**
  - Mean Time Between Failure (MTBF): > 3,000,000 hours
  - Data Reliability: < 1 non-recoverable error per 10^{16} bits read

Product Features

- Page based Flash management for increased endurance & random performance
- Optimized FW algorithms especially for high read access and long data retention applications
  - Proven power fail management for highest reliability
  - Near Miss ECC technology
  - Read Disturb Management
  - Wear Leveling technology
  - Data Care Management
- Detailed S.M.A.R.T. support and extended vendor information
- LED for operation indication
- In-field firmware update
- Swissbit Life Time Monitoring (SBLTM) tool and SDK for SBLTM (on request)
- Controlled BOM & PCN process
- Customized options like registers, removable device, connector options, write protect switch, grounded mounting hole, densities, uploads, label, etc.

Why Swissbit?

Swissbit is focused on the design, development, manufacture, and support of leading edge memory and storage solutions for the worldwide OEM/ODM marketplace. As a global supplier, Swissbit recognizes and addressees the higher level of application requirements of today's industrial, Netcom, and automotive customers by providing best-in-class products and services, with uncompromised attention to driving overall value and quality.

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[1] Adequate airflow is required to ensure the drive temperature, as reported in the S.M.A.R.T. data, does not exceed the specified maximum operating temperature.

[2] According to JEDEC (JESD47I), the time to write the full TBW is a minimum of 18 months. Higher average daily data volume reduces the specified TBW. The values listed are estimates and are subject to change without notice.

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Mouser Electronics

Authorized Distributor

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