

# swissbit®

## Product Fact Sheet

### Industrial SLIM SATA SSD (MO-297)

### X-600s Series

SATA Gen3 – 6.0 Gbit/s, SLC

Commercial and Industrial  
Temperature Grade

Date: July 20, 2023  
Revision: 1.06



## Product Summary

- **Capacities:** 16 GBytes, 32 GBytes, 64 GBytes, 128 GBytes
- **Form Factor:** M0-297 Slim SATA Solid State Drive (54 mm x 39 mm x 4 mm)
- **Compliance:** SATA Gen3 – 6 Gbit/s (Gen2 – 3 Gbit/s and Gen1 – 1.5 Gbit/s backward compatible)
- **Command Sets:** Supports ATA/ATAPI-8 and ACS-2
- **Performance:**
  - Read Performance: Sequential Read up to 520 MBytes/s, Random Read IOPs up to 76,000 IOPS
  - Write Performance: Sequential Write up to 405 MBytes/s, Random Write IOPs up to 73,000 IOPS
- **Operating Temperature Range<sup>1</sup>:**
  - Commercial: 0 °C to 70 °C / Industrial: -40 °C to 85 °C
- **Storage Temperature Range:** -40 °C to 85 °C
  - Operating Voltage: 3.3 V ± 5% / 5 V ± 10%
- **Power (Max):**
  - Read (Active): 1.7 W (3.3 V), 2.0 W (5 V) / Write (Active): 2.5 W (3.3 V), 2.9 W (5 V)
  - Idle: 380 mW (3.3 V), 550 mW (5 V) / Slumber: 115 mW (3.3 V), 275 mW (5 V)
- **Data Retention:** 10 Years @ Life Begin / 1 Year @ Life End
- **Endurance TeraBytes Written (TBW) @ Max Capacity<sup>2</sup>:** Client > 8,484; Embedded > 2,749; Enterprise > 1,231
- **Shock / Vibration:** 500 g / 20 g
- **High-Performance 32-Bit Processor with Integrated, Parallel Flash Interface Engines:**
  - Single-Level Cell (SLC) NAND Flash
  - Hardware BCH-code ECC (up to 66 bit correction per 1 KByte page)
- **Mean Time Between Failure (MTBF):** > 2,000,000 hours
- **Data Reliability:** < 1 non-recoverable error per 10<sup>16</sup> bits read

## Product Features

- Dynamic and Static Wear Leveling
- Subpage Mode Flash Translation Layer (FTL)
- Data Care Management
  - Active: Adaptive Read Refresh / Passive: Background Media Scan
- Lifetime Enhancements
  - Dynamic Bad Block Remapping / Write Amplification Reduction
- On-Board Power Fail Protection, AHCI, TRIM, and NCQ Support
- ATA Security Feature Set Support
- In-Field Firmware Update
- Enterprise-Grade Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T.)
- 15 µinch Gold-Plated Connector
- Life Cycle Management / Controlled "Locked" BOM
- AES256 Encryption (on request)
- Swissbit Life Time Monitoring (SBLTM) Tool and SDK for SBLTM (on request)

### 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 addresses 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.

<sup>1</sup> Adequate airflow is required to ensure the temperature, as reported in the S.M.A.R.T. data, does not exceed 115°C (industrial temperature drive) and 100°C (commercial temperature drive) respectively.

<sup>2</sup> According to JEDEC (JESD471), 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.