

# swissbit®

PRELIMINARY  
Product Fact Sheet

## Industrial CFast Card

### F-86 Series

SATA Gen3 – 6.0 Gbit/s, 3D pSLC

Commercial and Industrial  
Temperature Grade

Date: July 2, 2020  
Revision: 0.91



## Product Summary

- **Capacities:** 10 GBytes, 20 GBytes, 40 GBytes, 80 GBytes (3D pSLC)
- **Form Factor:** CFast-Sized Solid State Drive (36.4 mm x 42.8 mm x 3.6 mm)
- **Interface:** 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-4
- **CFast 2.0 Compatible**
- **Performance:** Burst Transfer Rate: Up to 600 MBytes/s in SATA Gen3 – 6.0 Gbit/s
  - Read Performance: Sequential Read up to 360 MBytes/s, Random Read 4K up to 15,000 IOPS
  - Write Performance: Sequential Write up to 224 MBytes/s, Random Write 4K up to 9,000 IOPS
- **Operating Temperature Range:** 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%
- **Power (Max):** ≤ 1386 mW / ≤ 400 mA
- **Data Retention:** 10 Years @ Life Begin / 1 Year @ Life End
- **Endurance in DriveWritesPerDay (DWPD):** JEDEC Enterprise Workload: Typical 3.1 (depends on drive config.)
- **Shock/Vibration:** 500 g / 20 g
- **High-Performance 32-Bit Processor with Integrated, Parallel Flash Interface Engines:**
  - Triple-Level Cell (TLC) 3D NAND Flash in pSLC mode
  - Flexible BCH and GCC ECC engines provide superior error correction performance
- **High Reliability:** Mean Time Between Failure (MTBF): > 2,000,000 hours @ 25°C
- **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)
- Active Data Care Management: Adaptive Read Refresh
- Lifetime Enhancements: Dynamic Bad Block Remapping / Write Amplification Reduction
- On-Board Power Fail Protection
- TRIM and NCQ Support
- ATA Security Feature Set Support
- DEVSLP Compatible
- Enterprise-Grade Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T.)
- End-to-End (E2E) Data Protection
- Advanced protection against radiation and soft-errors with SRAM ECC and low-alpha package
- AES-128 and AES-256 Encryption support with CBC and XTS modes (on request)
- TCG Opal 2.0 Compliant and Secure-Boot features (on request)
- On-die temperature sensor
- Life Cycle Management, controlled "Locked" BOM
- RoHS-6 Compliant
- In-Field Firmware Update<sup>2</sup>, Swissbit Life Time Monitoring (SBLTM) Tool and SDK

### 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.

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<sup>1</sup> DWPD values are based on a service life of 3 years.

<sup>2</sup> The support of In-Field FW update capabilities on host systems is recommended.