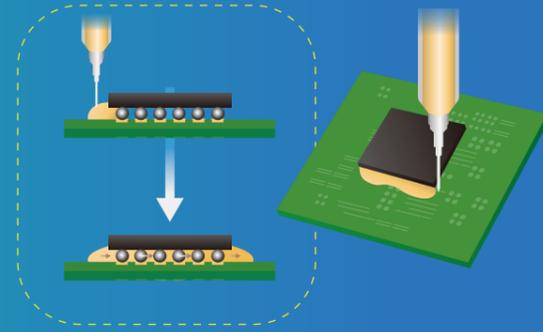


Underfill

- Complies with MILC-STD-810G requirement
- Strengthens PCBA solder joints for extreme environment change
- Enhance resistance against vibration and shock
- Reduces thermal stress damage to improve reliability

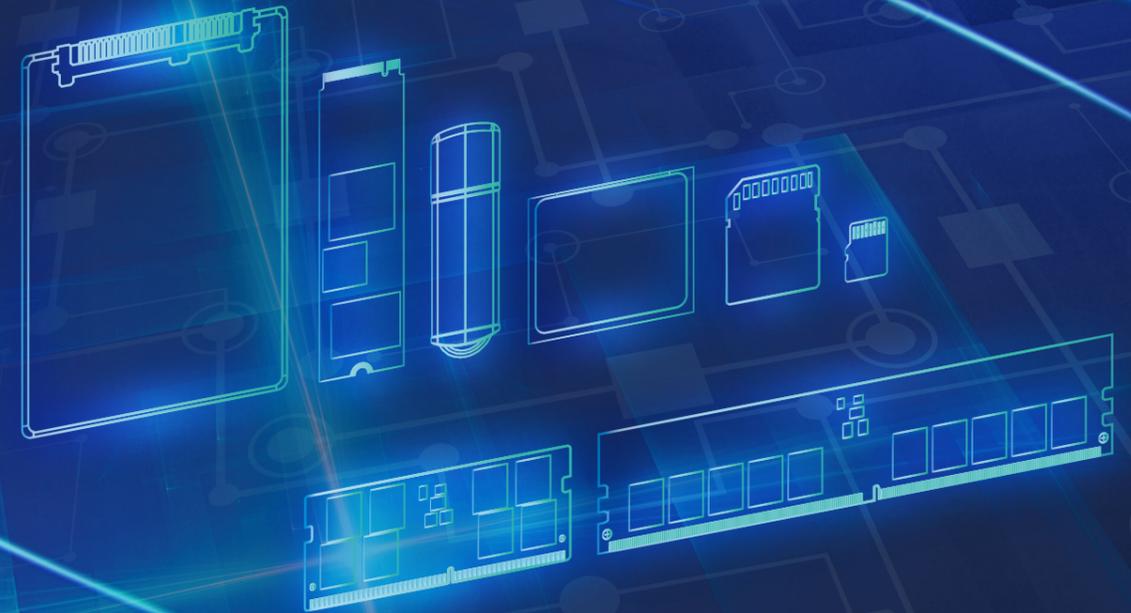


Industrial Temperature Solutions

- Full-range testing -45 °C ~ +90 °C
(Extend +/-5°C for further tolerance)
- Power cycling test, high temp & low temp test, temp cycling test
- Dynamic temp test and 10.5-hour PCBA static burn-in test in MP
- Original industrial-grade components
(memory chip and controller)

Testing Conditions

Grade	Product Temp
Wide Temp	SSD: -40°C ~ 85°C DRAM: -40°C~105°C Card: -40°C ~ 85°C
Normal Temp	SSD: -20°C ~ 75°C DRAM: -20°C~95°C Card: -20°C ~ 75°C



YOUR MOST TRUSTED PARTNER OF INDUSTRIAL STORAGE AND MEMORY SOLUTIONS

With over 22-year experience, Silicon Power becomes a trusted service provider of professional NAND storage and DRAM modules for high-end industrial and enterprise applications.

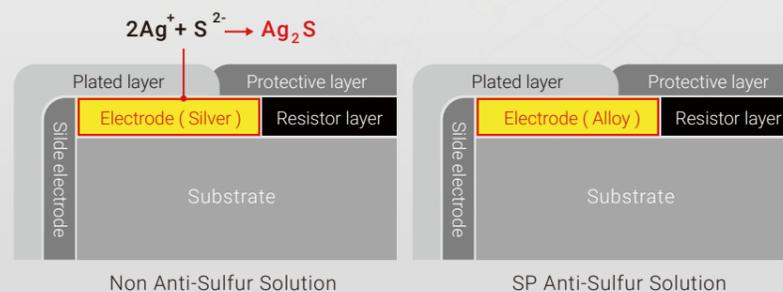
PFP (Power Failure Protection)

- HW-based PFP with tantalum capacitors and SW-based power shield
- Polymer tantalum capacitors up to 85°C, better than 70°C of super capacitors
- Hold-up time up to 20ms
- Hold-up circuit provides supreme protection for harsh environments



Anti-Sulfuration

- Flowers of sulfur (FOS) test method: ASTM B809-95
- Prevents corrosion to increase life cycle
- Superior resistance against sulfuration
- Highly reliable electrode construction



Professional In-House Design

- Customized FW adjustment
- Self-developed SMART IoT Toolbox
- Advanced temp and power protection

World-Class Manufacturing

- 100% AOI, RDT testing and traceability
- 90% automation manufacturing
- 100% 10.5-hour PCBA static burn-in

Unique Strength

- In-house chip-sorting technology before SMT
- Original NAND & DRAM source
- 24/7 technical support and failure analysis

Service and Support

- 6 months EOL/LTB/PCN notice
- Customer platform verification

Superior System Management

- 100% Fixed BOM by BOM code system
- Extended 7-year longevity supply
- Strict NPI project management

Product Quality

- 100% on-line SPC traceability
- 4M control (Man, Machine, Material, Method)
- Complies with MIL-STD-810G & IEC60068/61000/60529

Global Sales and Service

- Taipei, Taiwan (HQ and Factory)
- Amsterdam, Netherlands
- San Jose , USA
- Tokyo , Japan
- Shanghai & Wuhan, China
- Seoul, Korea
- Bangalore, India
- Bobingen, Germany
- London, England
- Hanoi, Vietnam
- Tunis, Tunisia



Catalogue



Website

www.silicon-power-industrial.com

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Wide-Coverage Product Line

Feature	Temperature	NAND
R-series - Reliable & Secure Power Failure Protect AES-256 Encryption & TCG Opal DRAM Inside	Wide-temp SSD: -40°C ~ 85°C DRAM: -40°C~105°C Card: -40°C ~ 85°C	SLC 60K P/E cycle
S-series - Performance-Oriented DRAM embedded		pSLC 100K / 60K / 30K P/E cycle by TLC & MLC
E-series - Cost-Effective & Reliable DRAM-less design		MLC 3K P/E cycle
F-series - Certified Security FIPS 140-2 Compliant	Normal-temp SSD: -20°C ~ 75°C DRAM: -20°C~95°C Card: -20°C ~ 75°C	TLC 3K P/E cycle LDPC technology
V-series - Automotive & Surveillance FrameSolid featured		
H-series - Continuous Read Workloads Optimized for sustained data access		

SP SMART Tool

SMART IoT Sphere	SMART Embedded	SMART Toolbox Utility
<ul style="list-style-type: none"> Alarmed and maintained by cloud Device monitoring and analysis (Windows & Linux Ubuntu) Mobile version supported 	<ul style="list-style-type: none"> Application C++ compiler development environment Supports Windows/Linux Intel x86 CPU, ARM-based CPU 	<ul style="list-style-type: none"> Monitor health, TBW and device status Block info, diagnostic scan, performance test Temperature detection and secure erase

pSLC Technology

- Special NAND sorting for high endurance and reliability
- Up to 30K P/E cycle (10 times the endurance of TLC)
- Supports wide-temp products

Type	Source Capacity	P/E cycle Guaranteed	P/E cycle SP Lab Testing
pSLC by MLC	1/2 of original MLC	20k	30k
pSLC by TLC	1/4 of original TLC	30k	50k

FrameSolid Series vs. Standard Series

Type	FrameSolid	Default Mode
Performance Drop	No	Dramatically
Stability	Stable	Unstable
Target Appliance	Surveillance Monitoring Boot-up device Consistent Long Run Device	Gaming Entertainment Consumer Product
Support Series	MEM3K0 / MEA3K0 / MEC3K0 SSD3K0 / MDA3K0 / MDC3K0 MSA3K0 / SDI3R0 / SDI5R0 SDT3R0 / SDT5R0	All Series

Hardware-Based Security Solutions

WORM SD Card	Security Key USB Dongle & uSD Card	Quick Erase & Write Protect
<ul style="list-style-type: none"> Write Once Read Many Prevents data from being erased, modified, or overridden Suitable for sensitive fiscal data and transaction records 	<ul style="list-style-type: none"> Smartcard chip available inside for USB dongle and uSD card form factor Certificate and Key store inside smartcard chip Suitable for TSE solution to meet German fiscal regulation Side-channel-attack free 	<ul style="list-style-type: none"> Quick Erase <ul style="list-style-type: none"> Fast Built-in Sanitize Command AES-256 Encryption Erasure Effective Overwrite Method Write Protect <ul style="list-style-type: none"> Prevents Accidental Changes & Deletion Hardware & Software Activation Protects Flash Data Integrity

Thermal Throttling

- SP SMART Toolbox monitors SSD temperature via built-in thermal sensor
- Dual thermal sensors on PCB and controller to prevent overheating
- Multiple-temp thresholds to optimize temperature range
- Timely dynamic frequency adjustment

Conformal Coating

- Compliant with IPC-A-610 E/ J-STD-001 coating standard
- Globally recognized coating materials: DOW 1-2577
- Meets UL94 V-0 flammability rating, UL 746E, IPC-CC-830, and MIL-I-46058C
- Automated dispensing machine for consistent thickness