

Titans series

INDUSTRIAL Rugged Metal
1.8" & 2.5" SATA Flash Disk

A PRO of Industrial Flash Memory Storage
www.apro-tw.com

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APRO Co., Ltd.

Preliminary spec. sheet (081209-V2.1)



Compatibility :



Supported O.S. :



Certification :



INDUSTRIAL
CompactFlash Card

INDUSTRIAL
PCMCIA ATA Card

INDUSTRIAL
micro IDE Flash Disk

INDUSTRIAL
Solid State Disk

INDUSTRIAL
micro SATA Flash Disk

INDUSTRIAL
Rugged USB Disk

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Operating temperature supports optionally
Standard grade 0°C ~ 70°C and Industrial grade -40°C ~ 85°C

Features:

- SLC-NAND type flash technology
- 1.8" or 2.5" SATA drive form-factor
- Extremely rugged metal casing to endure harsh environments
- Capacity from 128MB up to 8GB
- Performance up to 25.9MB/sec



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Specifications:

◆ Compatibility	Serial ATA 1.0a specification compliance
◆ Flash technology	SLC-NAND type flash based
◆ Form-factor	Rugged metal 2.5" SATA hard disk drive form-factor
◆ Host interface	SATA 7-pin (data) + 15-pin (power connector)
◆ Performance	
● Data transfer rate	Serial ATA Gen-I (1.5Gb/s)
● Sequential read	25.9 MB/sec (Max. /with dual flash / 100MB file test)
● Sequential write	11.9 MB/sec (Max. /with dual flash / 100MB file test)
● Average access time	0.7ms (estimated)
◆ Environmental specification	
● Operating temperature	Standard grade 0°C ~ 70°C / Industrial grade -40°C ~ 85°C
● Non-operating temperature	Standard grade -20°C ~ 80°C / Industrial grade -50°C ~ 95°C
● Humidity	10% ~ 95% non-condensing
● Acoustic noise	0dB
● Vibration	15G compliance to MIL-STD-810F
● Shock	1,500G compliance to MIL-STD-810F
● Altitude	70,000 feet

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◆ Power consumption

- Power requirement +5V ± 10%
- Reading mode 190.0mA(Max.)
- Writing mode 200.0mA(Max.)
- Sleeping mode 117.5mA(Max.)

◆ Reliability

- Wear-leveling Dynamic wear-leveling algorithms
- MTBF > 1,000,000 hours
- ECC Enhanced management 4-bits per 512bytes block
- Endurance > 2,000,000 cycles logically contributed by dynamic wear-leveling and advanced bad sector management algorithms
- Data reliability < 1 non-recoverable error in 10¹⁴ bits read
- Data retention 10 years

◆ Physical specification

- Weight (max.) 1.8" =59.4g / 2.10 oz. ; 2.5" =110g / 3.88 oz
- Dimension(W x L x H) 1.8" =69.85 x 60.00 x 9.50 (mm) ; 2.5" = 69.85 x 100.20 x 9.50 (mm)

◆ Conformal coating

Option for special request

◆ Warranty

- Standard grade 3 years
- Industrial grade 5 years

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Part number list – 1.8" rugged metal casing

Product picture	Capacity	0° C~ 70° C	-40° C~ 85° C
	128MB	SR8SF128M-SACSC	WR8SF128M-SAISI
	256MB	SR8SF256M-SACSC	WR8SF256M-SAISI
	512MB	SR8SF512M-SACSC	WR8SF512M-SAISI
	1GB	SR8SF001G-SACSC	WR8SF001G-SAISI
	2GB	SR8SF002G-SACSC	WR8SF002G-SAISI
	4GB	SR8SF004G-SACSC	WR8SF004G-SAISI
	8GB	SR8SF008G-SACSC	WR8SF008G-SAISI

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Part number list – 2.5" rugged metal casing

Product picture	Capacity	0° C~ 70° C	-40° C~ 85° C
	128MB	SR2SF128M-SACSC	WR2SF128M-SAISI
	256MB	SR2SF256M-SACSC	WR2SF256M-SAISI
	512MB	SR2SF512M-SACSC	WR2SF512M-SAISI
	1GB	SR2SF001G-SACSC	WR2SF001G-SAISI
	2GB	SR2SF002G-SACSC	WR2SF002G-SAISI
	4GB	SR2SF004G-SACSC	WR2SF004G-SAISI
	8GB	SR2SF008G-SACSC	WR2SF008G-SAISI

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X1 X2 X3 X4 X5 X6 X7 X8 X9 — **X11 X12 X13 X14 X15** / **C**

X1 : Grade

S : Standard grade – operating temp. 0° C ~ 70 ° C

W : Industrial grade – operating temp. -40° C ~ 85 ° C

X13 : Controller grade

C : Commercial grade

I : Industrial grade

X2 : The material of case

R : Rugged metal casing

X14 : Flash IC

S : Samsung SLC-NAND flash IC

X3 X4 X5 : Product category

8SF : 1.8" SATA flash disk

2SF : 2.5" SATA flash disk

X15 : Flash IC grade / Type

C : Commercial grade

I : Industrial grade

X6 X7 X8 X9 : Capacity

128M: 128MB 002G: 2GB

256M: 256MB 004G: 4GB

512M: 512MB 008G: 8GB

001G: 1GB

C : Reserved for specific requirement

C : Conformal-coating

X11 : Controller

S : 3S 88x3 A5 (Titans series)

X12 : Controller version

A,B,C.....

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