

THEMIS Series

Industrial Secure Digital (SD) Memory Card & Industrial Secure Digital High Capacity (SDHC) Memory Card



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Advanced Performance & Rugged Orientation



Product features

- SLC - NAND type flash technology
- Fully compatible to the SDA Specifications V1.01 / V1.1 / V2.0
- Write Protect feature using mechanical switch
- Supports industrial grade operating temp. -40° C ~ +85° C
- Supports SD mode and SPI mode
- Supports CPRM
- RoHS & REACH compliant
- SD card capacity from 128MB up to 2GB ; SDHC from 4GB up to 8GB

Product specifications

Compatibility

- SD Memory Card Specifications, Part 1 Physical Layer Specification, version 2.0
- SD Memory Card Specifications, Part 2, File System Specification, Version 2.00
- SD Memory Card Specifications, Part 3, Security Specification, Version 2.00
- Compatible with Multimedia Card, System Specification, Version 4.2

SD Specification Ver. 1.01

- Capacity supports from 128MB up to 2GB
- 9 pins contact pad
- FAT file system

SDHC Specification Ver. 2.00

- Capacity supports from 4GB up to 8GB
- 9 pins contact pad
- FAT32 file system
- Class 6

Flash technology

- SLC-NAND type flash based

Form-factor

- Standard SD memory card form-factor

Host Interface

- 9 pins connector

Write Protection

- Write protect feature using mechanical switch

Performance

- Sequential read: SD : 19.98 MB/sec, SDHC : 20.09 MB/sec
- Sequential write: SD : 17.21 MB/sec, SDHC : 16.86 MB/sec

- Average access time: 1 ms (estimated)

- Class Speed Rating: SDHC memory cards Class 6

Environmental specification

- Operating temp.: IND. -40° C ~ +85° C
- Non-operating temp.: IND. -50° C ~ +95° C
- Humidity: 10% ~ 95% non-condensing
- Vibration: 15G peak-to-peak
- Shock: 1,000G Max.
- Altitude: 80,000 feet

Power consumption

- Power requirement: 3.3V
- Reading mode: 30.0 mA (Max.)
- Writing mode: 37.5 mA (Max.)
- Standby mode: 160 uA (Max.)

Reliability & Durability

- Durability: 10,000 inserting cycles
- Bending: 10N
- Torque: 0.15N ± 2.5 deg.
- Drop Test: 1.5M free fall
- WP Switch Cycle: 1,000 cycle @ slide force 0.4N to 5N
- Wear-leveling: Global wear-leveling algorithms
- MTBF: > 3,000,000 hours
- ECC: 16 bits or 24 bits per 1 Kbytes / 24 bits per 512 bytes
- Endurance: > 2,000,000 cycles
- Data retention: 10 years

Physical specification

- Weight (max.): 2.5 g / 0.09 oz. (Max.)
- Dimension(W x L x H): 32.0 x 24.0 x 2.1 (mm) / 1.26 x 0.95 x 0.08 (inch)

- Conformal coating: Option for special request

- Warranty: 5 years

Operating temperature supports Industrial grade -40° C ~ +85° C

Part number list - Industrial SD & SDHC Memory Card

Product picture	Capacity	-40° C ~ +85° C
	128MB	WPSDC128M-EAISI
	256MB	WPSDC256M-EAISI
	512MB	WPSDC512M-EAISI
	1GB	WPSDC001G-EAISI
	2GB	WPSDC002G-EAISI
	4GB	WPSDH004G-EAISI
	8GB	WPSDH008G-EAISI

Part number decoder

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

Example

W P S D H 0 0 8 G — E A I S I

X1 Grade

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

X2 The material of casing

P : Plastic casing

X3 X4 X5 Product category

SDC : Secure Digital (SD) memory card

SDH : Secure Digital High Capacity (SDHC) memory card

X6 X7 X8 X9 Capacity

128M : 128MB 001G : 1GB

256M : 256MB 002G : 2GB

512M : 512MB 004G : 4GB

008G : 8GB

X11 Controller

E : ITE (THEMIS Series)

X12 Controller version

A,B,C.....

X13 Controller grade

I : Industrial grade

X14 Flash IC

S : Samsung SLC-NAND flash IC

X15 Flash IC grade

I : Industrial grade