

THEMIS Series

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



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

Power consumption

- ❖ Power requirement 3.3V

SDHC Specification Ver. 2.00

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

Reading mode

- ❖ 30.0 mA (Max.)

Writing mode

- ❖ 37.5 mA (Max.)

Flash technology

- ❖ SLC-NAND type flash based

Standby mode

- ❖ 160 uA (Max.)

Form-factor

- ❖ Standard SD memory card form-factor

Reliability & Durability

- ❖ Durability 10,000 inserting cycles

Host Interface

- ❖ 9 pins connector

Bending

- ❖ 10N

Write Protection

- ❖ Write protect feature using mechanical switch

Torque

- ❖ 0.15N ± 2.5 deg.

Performance

Sequential read

- ❖ SD : 19.98 MB/sec
- ❖ SDHC : 20.09 MB/sec

Drop Test

- ❖ 1.5M free fall

Sequential write

- ❖ SD : 17.21 MB/sec
- ❖ SDHC : 16.86 MB/sec

WP Switch Cycle

- ❖ 1,000 cycle @ slide force 0.4N to 5N

Average access time

- ❖ 1 ms (estimated)

Wear-leveling

- ❖ Global wear-leveling algorithms

Class Speed Rating

- ❖ SDHC memory cards Class 6

MTBF

- ❖ > 3,000,000 hours

Environmental specification

Operating temp.

- ❖ IND. -40° C ~ +85° C

ECC

- ❖ 16 bits or 24 bits per 1 Kbytes / 24 bits per 512 bytes

Non-operating temp.

- ❖ IND. -50° C ~ +95° C

Endurance

- ❖ > 2,000,000 cycles

Humidity

- ❖ 10% ~ 95% non-condensing

Data retention

- ❖ 10 years

Vibration

- ❖ 15G peak-to-peak

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)

Shock

- ❖ 1,000G Max.

Conformal coating

- ❖ Option for special request

Altitude

- ❖ 80,000 feet

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

X11 Controller

E : ITE (THEMIS Series)

X2 The material of casing

P : Plastic casing

X12 Controller version

A,B,C,....

X3 X4 X5 Product category

SDC : Secure Digital (SD) memory card

SDH : Secure Digital High Capacity (SDHC) memory card

X13 Controller grade

I : Industrial grade

X6 X7 X8 X9 Capacity

128M : 128MB 001G : 1GB

256M : 256MB 002G : 2GB

512M : 512MB 004G : 4GB

008G : 8GB

X14 Flash IC

S : Samsung SLC-NAND flash IC

X15 Flash IC grade

I : Industrial grade