

# THEMIS Series

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



### Product features

- SLC - NAND type flash technology
- 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

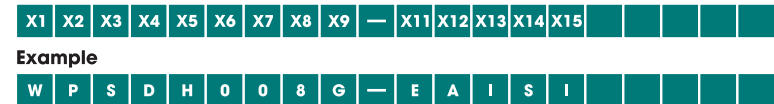
<b>Compatibility</b>	<ul style="list-style-type: none"> <li>Capacities 128MB ~ 2GB are compliant with SD V1.01 / V1.1 / V2.0 specifications</li> <li>Capacities 4GB ~ 8GB are compliant with SD V1.01 / V1.1 / V2.0 / V3.0 specifications</li> <li>SD Memory Card Specifications, Part 1 Physical Layer Specification, Version 2.0</li> </ul>
<b>SD Specification Ver. 2.00</b>	<ul style="list-style-type: none"> <li>Capacity supports from 128MB up to 2GB</li> <li>9 pins contact pad</li> <li>FAT file system</li> </ul>
<b>SDHC Specification Ver. 3.00</b>	<ul style="list-style-type: none"> <li>Capacity supports from 4GB up to 8GB</li> <li>9 pins contact pad</li> <li>FAT32 file system</li> <li>Class 10</li> </ul>
<b>Flash technology</b>	SLC-NAND type flash based
<b>Form-factor</b>	Standard SD memory card form-factor
<b>Host Interface</b>	9 pins connector
<b>Write Protection</b>	Write protect feature using mechanical switch
<b>Performance</b>	
Sequential read	<ul style="list-style-type: none"> <li>SD : 19.20 MB/sec</li> <li>SDHC : 19.40 MB/sec</li> </ul>
Sequential write	<ul style="list-style-type: none"> <li>SD : 15.30 MB/sec</li> <li>SDHC : 15.10 MB/sec</li> </ul>
Average access time	1 ms (estimated)
<b>Class Speed Rating</b>	SDHC memory cards Class 10
<b>Environmental specification</b>	
Operating temp.	IND. -40°C ~ +85°C
Non-operating temp.	IND. -50°C ~ +95°C
Humidity	10% ~ 95% non-condensing
Vibration	15 G peak-to-peak
Shock	1,000 G Max.
Altitude	80,000 feet
<b>Power consumption</b>	<ul style="list-style-type: none"> <li>Power requirement 3.3V</li> <li>Reading mode 30.0 mA (Max.)</li> <li>Writing mode 37.5 mA (Max.)</li> <li>Idle mode 160 uA (Max.)</li> </ul>
<b>Reliability &amp; Durability</b>	<ul style="list-style-type: none"> <li>Durability 10,000 Inserting cycles</li> <li>Bending 10N</li> <li>Torque 0.15N ± 2.5 deg.</li> <li>Drop Test 1.5M free fall</li> <li>WP Switch Cycle 1,000 cycle @ slide force 0.4N to 5N</li> <li>Wear-leveling Global wear-leveling algorithms</li> <li>MTBF &gt; 3,000,000 hours</li> <li>ECC 16 bits or 24 bits per 1 Kbytes / 24 bits per 512 bytes</li> <li>Endurance &gt; 2,000,000 cycles</li> <li>Data retention 10 years</li> </ul>
<b>Physical specification</b>	<ul style="list-style-type: none"> <li>Weight (max.) 2.5 g / 0.09 oz. (Max.)</li> <li>Dimension(W x L x H) 32.0 x 24.0 x 2.1 (mm) / 1.26 x 0.95 x 0.08 (inch)</li> </ul>
<b>Warranty</b>	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 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

CF Industrial CompactFlash Card

CFast Industrial CFast Card

ATA Industrial PCMCIA ATA Card

MIF Industrial micro IDE Flash Module

MSE Industrial micro SATA Flash Module

MUM Industrial micro USB Flash Module

MPM Industrial mini PCIe Flash Module

MSM Industrial mini SATA Flash Module

SSD Industrial Solid State Disk

UED Industrial Rugged Metal USB Flash Disk

SD Industrial SD & SDHC Memory Card

AD Industrial Adapter Card-Drive

CF Industrial CompactFlash Card

CFast Industrial CFast Card

ATA Industrial PCMCIA ATA Card

MIF Industrial micro IDE Flash Module

MSE Industrial micro SATA Flash Module

MUM Industrial micro USB Flash Module

MPM Industrial mini PCIe Flash Module

MSM Industrial mini SATA Flash Module

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