Panasonic

PE Series

microSD/SDHC Memory Card, Consumer Plus pSLC Model

■ Product Outline

PE series are microSD/SDHC memory cards adopting built-in pSLC technology. This enables higher endurance/data retention and power fail robustness than MLC NAND by using 1 bit per cell in pSLC mode. They are formatted complying with SD card specification.

■ **Product Specification** (specifications and appearances may be changed without notice.)

Appearance Part Number RP-SMPE04DA1 RP-SMPE0BDA1 RP-SMPE16DA1 RP-SMPE32DA1 Race in Taiwan Available user data area capacity *1) SD Physical Specification SD speed class CLASS© UHS speed grade UHS speed grade UHS speed mode			4GB	8GB	16GB	32GB
Capacity			@ U MICS 4 FIEL I GB Made in Taiwan	@ 1 8 I GB Made in Taiwan	@ 11 Micro 16 Made in Taiwan	© 1 Miggs 32 I GB Made in Taiwan
Specification SD speed class CLASS©	Capacity		3,971,973,120 byte	7,960,756,224 byte	16,013,819,904 byte	32,094,781,440 byte
UHS speed grade		SD Physical	Ver. 3.01			
Specification		SD speed class	CLASS(0)			
Speed mode		UHS speed grade	IU			
Read/Write Performance(up to) Read 73MB/s (SDR104 mode) 73MB/s (SDR104 mode) 73MB/s (SDR104 mode) 95MB/s (SDR104 mode) Absolute Maximum Ratings Supply Voltage Min: -0.3 V; Max: VDD +0.3 V Min: -0.3 V; Max: VDD +0.3 V Output Voltage Min: -0.3 V; Max: VDD +0.3 V Min: -0.4 mA; Max: +24 mA Operating Temperature -25 °C to +85 °C Storage Temperature -40 °C to +85 °C		Speed mode				
Nead	Backside mark	Control Code				
up to) Write 45MB/s (SDR104 mode) 45MB/s (SDR104 mode) 45MB/s (SDR104 mode) 90MB/s (SDR104 mode) Absolute Maximum Ratings Input Voltage Min: -0.3 V; Max: VDD +0.3 V Output Voltage Min: -0.3 V; Max: VDD +0.3 V Output Current Min: -24 mA; Max: +24 mA Operating Temperature -25 °C to +85 °C Storage Temperature -40 °C to +85 °C	Performance(Read				
Absolute Maximum Ratings Input Voltage		Write				
Maximum Ratings Output Voltage Min : -0.3 V ; Max : VDD +0.3 V Output Current Min : -24 mA ; Max : +24 mA Operating Temperature -25 ℃ to +85 ℃ Storage Temperature -40 ℃ to +85 ℃	Maximum	Supply Voltage	Min: 0.3 V; Max: +4.6 V			
Ratings Output Voltage Min : -0.3 V; Max : VDD +0.3 V Output Current Min : -24 mA; Max : +24 mA Operating Temperature -25 ℃ to +85 ℃ Storage Temperature -40 ℃ to +85 ℃		Input Voltage	Min:-0.3 V; Max: VDD +0.3 V			
Output Current Min: -24 mA; Max: +24 mA Operating Temperature Storage Temperature -40 °C to +85 °C		Output Voltage	Min:-0.3 V; Max: VDD +0.3 V			
Temperature -25 C to $+85$ C Storage -40 C to $+85$ C Temperature		Output Current	Min:-24 mA; Max:+24 mA			
Temperature -40 C to +85 C	Environmental Specification	Temperature	-25 ℃ to +85 ℃			
1 Ollip Classic			-40 ℃ to +85 ℃			
Environmental Hymidity 5 % RH to 95 % RH			5 % RH to 95 % RH			
Specification Vibration 15 Gp-p						
Shock 1,000 G			1,000 G			
Mating Cycles 10,000 cycles		Mating Cycles	10,000 cycles			

^{*1)} Free user area capacity after formatted.

Absolute Maximum Ratings are the values of limitation, which do not damage the card. So those values do not define the operational range.

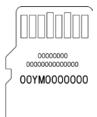
Products comply with EU RoHS directives.

■ Marking Specification (example; 4GB)



"4GB"
"MADE IN TAIWAN"

Card Capacity Country of origin



"000000000"
"0000000000000"

Internal control code Internal control code

"00YM0000000" Y

Μ

Serial Number Last digit of Manufacture year Manufacture month

(January->A, February->B,

■ System Reliability

- a. Error detect and corrective function
- b. Static wear leveling
- c. Bad block management

■ Notice and Caution

If you think about the usage for which special quality or reliability of the products is needed and failure or malfunction of the products may directly threaten life or injury for the special usage (aeronautic or cosmic usage, military usage, combustion machine, life support applications or safety applications), please counsel with our contacts in advance.

Write frequency and storage temperature will affect data retention time. Please make a backup for important data.

■ Warranty

If the product cannot be used because of failure which is determined as defect in design or in production of the product, it is replaced by same product or equivalent one within 12 months from the delivery date of product.