

Memory Cards



SD/SDHC/SDXC microSD/microSDHC/microSDXC

To meet the various and stringent industry requirements, ATP flash products are developed and pass a series of qualification process and testing for reliability, durability, data integrity, and better TCO under extreme environmental conditions. ATP Industrial Grade SD/microSD cards, with built-in SLC (Single Level Cell) and iTemp MLC/aMLC type NAND flash, are perfect fit for high demanding industrial applications such as automation, internet of things (IoT), healthcare, handheld devices, military, and aviation.

ATP's memory cards are with versatile purpose-built features and a complete portfolio of validation processes.

ATP implements AutoRefresh/Dynamic Data Refresh technology activates data integrity protection in both read intensive applications and seldom accessed area. To conquer the unstable power issue, ATP initiates SPOR (Sudden-Power-Off Recovery) FW backup mechanism to trace previous valid data effectively. In terms of real time health check of SD products, ATP SD life Monitor/single command enables to detect the remaining life and to provide details. Following the industry trend of Software Integration, ATP is able to grant software support using vendor command to avoid interrupting in multitasking OS environment. The comprehensive validation process starts from its in-house NAND flash IC level test, specific industry standard test (AEC-Q100, MIL-STD, JEDEC... etc), power cycling test to 100% mass production burn in test. Moreover, ATP environmental testing and SiP (System-in-Package) technology guarantee the long-time reliability and consistent performance.

Key Features

- Advanced Wear Leveling Algorithm
- Bad Block Management / Error Handling Mechanism
- Read Disturb Protector - AutoRefresh to ensure data integrity during read operation
- Data Retention – Dynamic Data Refresh to mitigate the risk of data retention especially for non-read area
- Power failure Protection
- SiP (System-in-Package) Technology - IP57/IP67 Waterproof/Dustproof test (IEC 60529); ESD resistant
- Highly reliable and passes environmental testing (Bend/Torque/Salt Spray/Solar radiation)
- SD Life Monitor

(Note : The compatibility and support of Life Monitor may vary on different platforms/operating systems)





Specifications

Product Name	SD/SDHC/SDXC		
Flash Type	SLC	aMLC / iTemp aMLC	MLC/ iTemp MLC
Density	512MB to 8GB	4GB to 64GB	8GB to 128GB
Performance	Sequential Read up to 69 MB/s	Sequential Read up to 95 MB/s	Sequential Read up to 91 MB/s
	Sequential Write up to 38 MB/s	Sequential Write up to 79 MB/s	Sequential Write up to 59 MB/s
Interface	High Speed Mode Class 6 (512MB to 2GB) Class 10 (4GB to 8GB) Ultra High Speed Mode UHS-I, U3 (4GB to 8GB)	Ultra High Speed Mode UHS-I, U3	Ultra High Speed Mode UHS-I, U1 (8GB to 16GB) UHS-I, U3 (32GB to 128GB)
Operating Temperature	-40°C to 85°C	-25°C to 85°C ; -40°C to 85°C	-25°C to 85°C ; -40°C to 85°C
Storage Temperature	-55°C to 90°C		
Reliability	Advanced Static/Dynamic Wear-Leveling/ AutoRefresh & Dynamic Data Refresh**		
	TBW*(max.) : 192 TB	TBW*(max.) : 512 TB	TBW*(max.) : 153 TB
	MTBF@25C: >5,000,000 hours	MTBF@25C: >3,000,000 hours	MTBF@25C: >2,000,000 hours
	Number of Insertions: 10,000 minimum		
Dimensions: LxWxH (mm)	32.0 x 24.0 x 2.1		

Product Name	microSD/microSDHC/microSDXC		
Flash Type	SLC	aMLC / iTemp aMLC	MLC/ iTemp MLC
Density	512MB to 8GB	4GB to 32GB	8GB to 64GB
Performance	Sequential Read up to 82 MB/s	Sequential Read up to 88 MB/s	Sequential Read up to 74 MB/s
	Sequential Write up to 39 MB/s	Sequential Write up to 78 MB/s	Sequential Write up to 75 MB/s
Interface	High Speed Mode Class 6 (512MB to 2GB) Class 10 (4GB to 8GB) Ultra High Speed Mode UHS-I, U3 (4GB to 8GB)	Ultra High Speed Mode UHS-I, U3	Ultra High Speed Mode UHS-I, U1 (8GB) UHS-I, U3 (16GB to 64GB)
Operating Temperature	-40°C to 85°C	-25°C to 85°C ; -40°C to 85°C	-25°C to 85°C ; -40°C to 85°C
Storage Temperature	-55°C to 90°C		
Reliability	Advanced Static/Dynamic Wear-Leveling/ AutoRefresh & Dynamic Data Refresh**		
	TBW* (max.) : 192 TB	TBW* (max.) : 256 TB	TBW*(max.) : 77 TB
	MTBF@25°C: >5,000,000 hours	MTBF@25°C: >3,000,000 hours	MTBF@25°C: >2,000,000 hours
	Number of Insertions: 10,000 minimum		
Dimensions: LxWxH (mm)	15.0 x 11.0 x 1.0		

*All TBW data listed are under highest sequential write value in each product line.
 The TBW data are subject to change by density, configuration and customers' applications.
 **Available on a project basis.