



# XL+ | SD 3.01 | SD Card

SMART's high performance, industrial grade XL+ SD Cards support OEM markets such as networking, telecommunications and data communications, embedded computing, medical, automotive, and industrial applications. Offered in SLC NAND Flash, the XL+ SD Cards are available in capacities from 1GB to 32GB.

SMART's XL+ SD Cards comply with SD v3.01 SDSC, SDHC and SDXC Standard. Incorporating onboard error detection and correction algorithms, and static and dynamic wear-leveling techniques, the XL+ SD Cards ensure years of reliable operation over a product's life.



## Features & Benefits

- Capacities from 1GB to 32GB
- Low Power Dissipation
- Onboard Wear-Leveling
- RoHS Compliant
- Support C-Temp, E-Temp & I-Temp

## Applications

- Airline Entertainment Systems
- Automotive Telematics, Navigation and Infotainment
- Defense
- Digital Commercial Camcorders
- Embedded Computing
- Gaming
- Industrial Meters and Industrial Control
- Networking
- Telecom and Communications

## Product Family Overview

Form Factor	Capacity	Sequential Performance
SD 3.01 SD Card	1GB to 32GB	Up to 98MB/s Read Up to 75MB/s Write

## Specifications

XL+   SD 3.01   SD Card	
NAND Type	SLC
<b>Performance</b>	
Sequential Read/Write (maximum) (Based on SDR104 (UHS-I, 1.8V, 208MHz))	Read up to 98MB/s Write up to 75MB/s
<b>Reliability</b>	
MTBF	> 3,000,000 hours
Data Reliability	< 1 Non-Recoverable Error in 10 <sup>14</sup> bits read
Data Retention	10 years >90% life remaining 1 year at the end of life
Endurance (Sequential workload)	32GB: 1620TBW
	16GB: 800TBW
	8GB: 400TBW
	4GB: 200TBW
	2GB: 180TBW
1GB: 90TBW	
<b>Power</b>	
Vcc	2.7V – 3.6V
Read	<160mA
Write	<253mA
Idle	<270µA
<b>Environmental</b>	
Shock (operational)	1500G half-sine, 0.5 msec, 1 shock along each axis, X, Y, Z in each direction
Vibration	15g rms 10-2000 Hz, 3 axis
Operating Temperature	Commercial: 0°C to +70°C
	Extended: -25°C to +85°C
	Industrial: -40°C to +85°C
Storage Temperature	-40°C to +85°C
Humidity	5% to 95%, non-condensing, relative humidity
<b>Physical</b>	
Length	32.0mm
Width	24.0mm
Thickness	2.1mm
Weight	2.0g

## Ordering Information

Part Number	Density
<b>XL+   SD 3.01   SD Card</b>	
<b>Commercial Operating Temperature (0°C to +70°C)</b>	
SH9SD032GSNIDSC02	32GB
SH9SD016GSNICSC02	16GB
SH9SD008GSNICSC02	8GB
SH9SD004GSMIBSC02	4GB
SP9SD002GPBI9SC01	2GB
SP9SD001GPBI8SC01	1GB
<b>XL+   SD 3.01   SD Card</b>	
<b>Industrial Operating Temperature (-40°C to +85°C)</b>	
SH9SD032GSNIDSI02	32GB
SH9SD016GSNICSI02	16GB
SH9SD008GSNICSI02	8GB
SH9SD004GSMIBSI02	4GB
SP9SD002GPBI9SI01	2GB
SP9SD001GPBI8SI01	1GB
<b>XL+   SD 3.01   SD Card</b>	
<b>Extended Operating Temperature (-25°C to +85°C)</b>	
SP9SD002GPBI9SE01	2GB
SP9SD001GPBI8SE01	1GB



For more information, please visit: [www.smartm.com](http://www.smartm.com)

\*Product images are for promotional purposes only. Labels may not be representative of the actual product.

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