

PRODUCT PORTFOLIO

microSD/SDHC/SDXC Cards

microSD cards have been mainstream for years as storage for mobile phones, action cameras and other consumer devices. More recently, the small, light-weight and rugged form factor has become one of the most popular storage media for industrial and OEM applications as well. For handheld devices and other real estate-constrained designs, across a wide range of applications including inventory management, telecommunications, medical devices, power and energy, infotainment and transportation, Delkin Devices offers a full menu of microSD cards, allowing the best product selection to match any use model. Delkin microSD products have many additional benefits over standard retail consumer-grade cards, including BOM control, life cycle management and outstanding applications support.

Whether the application calls for a few Megabytes of storage to launch an application, or several Gigabytes to store video data, Delkin has the solution.

For the most demanding applications, in terms of environmental conditions, write-intensive workload or the mission-critical nature of the stored data, Delkin offers true industrial SD controllers, high endurance SLC NAND flash, full industrial temperature range and long life cycles.

For more cost sensitive designs, Delkin offers lines of MLC/3D Industrial - based cards - the Utility family in standard (-25°C to +85°C) and Utility+ family offering full industrial (-40°C to +85°C) temperature ranges.

Regardless of the microSD product family, Delkin ensures consistent performance and host compatibility through managed configurations. Delkin locks the card configuration down to the specific controller, firmware and flash chips, with a change to any of these components dictating a new part number. When an unavoidable EOL occurs to any of these items, Delkin communicates the discontinuation in advance, providing the opportunity to place a last time buy as well as to qualify the replacement solution.

Additionally, since the Delkin Devices facility in Poway, California is the headquarters for our design, manufacturing and support teams, we can also provide customized microSD solutions. Options include pad printing, content or image loading, conformal coating or other mechanical modifications to meet a specific need. Contact us to ask how a card can be customized for your application.



HIGHLIGHTS

Four microSD Product Families

- SLC, MLC and 3D Flash
- Commercial & Industrial Temp
- SD 3.0

Wide Range of Capacities from 128MB to 128GB

Support for SD and SPI Modes

Controlled BOM

Life Cycle Management

microSD/SDHC/SDXC CARD Product Matrix



SD Product Family	U331C Series		U300 Series		Utility microSD		Utility+ microSD	
Interface	SD 3.0, Class 10, UHS-I							
Connector	Standard microSD 8 pin							
Outline Dimensions	11 x 15 x 1 mm							
Flash Type	SLC				MLC / 3D Industrial			
Density Range	128 MB – 2 GB (SD) 4GB (SDHC)		2GB (SD) 4GB - 8GB (SDHC)		4GB – 32GB (SDHC) 64GB – 128GB (SDXC)		4GB – 32GB (SDHC) 64GB – 128GB (SDXC)	
Data Retention	10 years - up to 10% of P/E cycles				5 years - up to 10% of P/E cycles			
	1 year - at end of life / 100% of cycles				1 year - at end of life / 100% of cycles			
Endurance (Raw Flash Level)	60,000 P/E cycles				3,000 P/E Cycles MLC 1,500 – 3,000 P/E Cycles 3D Industrial			
Operating Temperature	-40°C to +85°C		-40°C to +85°C		-25°C to +85°C		-40°C to +85°C	
Storage Temperature	-40°C to +85°C		-50°C to +100°C		-40°C to +85°C			
Performance								
Sequential Read (MB/s)	up to 22		up to 29		up to 95			
Sequential Write (MB/s)	up to 22		up to 20		up to 90			
MTBF	≥ 2,000,000 hours (0 - 25°C)				≥ 3,000,000 hours (0 - 25°C)			
Shock*	1,500 G for 0.5msec							
Vibration*	20Hz ~80Hz/1.52mm displacement, 80Hz~2000Hz / 20G Acceleration							
Humidity	5 - 95% RH, non-condensing				95% RH under 40°C			
Voltage	2.7 – 3.6 V Normal							
Power Consumption	Read typically < 50 mA Write typically < 100 mA Idle typically < 500 uA				Read typically < 400 mA Write typically < 400 mA Idle typically < 1000 uA			
Features & Tools	Proven Power Fail Safety Sophisticated Wear Leveling & Bad Block management Highest Endurance Longest Life Cycle				Robust Power Fail & Firmware Protection Sophisticated Wear Leveling & Bad Block management SMART Data Reporting & Dashboard Limited Life Cycle Management Cost Effective			
SMART Capability	CMD56, Libraries Available Delkin Dashboard (Windows)		CMD56, Emulation Dashboard		CMD56, Libraries Available Delkin Dashboard (Windows)			
Part Numbers	128MB S312TLKJM-C1000-3 256MB S325TLMJM-C1000-3 512MB S351TLNJM-C1000-3 1GB S30GTLNJM-C1000-3 1GB S302TLNJM-C1000-3 4GB S304TLNJM-U1000-3 Contact Delkin for other options		2GB S302MMZAL-C1000-D 4GB S304MMZAL-U1000-D 8GB S308MMZAL-U1000-D All capacities include AES Encryption Engine. Contact Delkin for other options		4GB S404APYJP-U1000-3 8GB S408APGJP-U1000-3 16GB S416APGJP-U3000-3 32GB S432FQYFA-U1000-3 64GB S464FQYFA-U1000-3 128GB S41HFQYFA-U1000-3 Contact Delkin for other options, including pSLC configurations		4GB S304APYJP-U1000-3 8GB S308APGJP-U1000-3 16GB S316APGJP-U3000-3 32GB S332FQYFA-U1000-3 64GB S364FQYFA-U1000-3 128GB S31HFQYFA-U1000-3 Contact Delkin for other options, including pSLC configurations	