

# DELKIN DEVICES®

Rugged Controlled Storage.

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## Commercial MLC microSD

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### Product Highlights

- Compliant with SD 3.0
- Supports SD and SPI Modes
- Capacities in MLC: 4GB – 32GB SDHC, 64GB – 128GB SDXC
- Two Operating Temperature Ranges
  - Utility: -25 to 85°C
  - Utility+: -40 to 85°C
- Read / Write Speeds up to 90 / 80MB/s\*

*\*Capacity Dependent*

## Utility & Utility+ microSD

With many light industrial, medical and handheld designs requiring a cost effective industrial-grade microSD, Delkin's Utility line is the ideal storage solution. Utility microSD cards are offered in 4GB to 128GB MLC flash, built with a controlled BOM and managed life cycle to deliver consistent performance and no surprises. The Utility line is compliant with the SD 3.0 standard for read / write speeds up to 90 / 80 MB/s and built to industrial standards. Utility microSD cards are rated for -25 to 85°C operation and are mechanically rugged, to withstand a range of environmental conditions. Utility+ microSD cards are rated for full industrial temperature operation, from -40 to +85°C.

## Delkin Utility & Utility+ microSD Part Numbers

Capacity	Utility Series	Utility+ Series
4GB	S404APY5Q-U1000-3	S304APY5Q-U1000-3
8GB	S408APG49-U1000-3	S308APG49-U1000-3
16GB	S416APG49-U3000-3	S316APG49-U3000-3
32GB	S432APG49-U3000-3	S332APG49-U3000-3
64GB	S464APG5S-U3000-3	S364APG5S-U3000-3

Capacity	Utility Series	Utility+ Series
128GB	S41HAPGAC-U3000-3	S31HAPGAC-U3000-3

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## Technical Specifications

### Environment

#### Operating Temp

Utility microSD -25 to +85°C

Utility+ microSD -40 to +85°C

#### Storage Temp

-40 to +85°C

#### Shock<sup>1</sup>

1500G, 0.5msec duration

#### Vibration<sup>2</sup>

7.7GRMS

20 – 80Hz / 1.52mm displacement

80Hz – 2000Hz, 20G acceleration

## Reliability / Endurance

### TBW<sup>3</sup>

SLC: N/A

MLC: 12 TBW

### MTBF

> 3 million hours (0 to +25°C)

> 200,000 hours (60°C)

## Capacity Range

### SLC

N/A

### MLC

uSD: 4GB – 128GB

## Performance<sup>4</sup>

### SLC

N/A

### MLC

Sequential Read up to 90MB/s\*

Sequential Write up to 80MB/s\*

\*UHS-1 Mode

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<sup>1</sup>Per MIL-STD-810G, Method 516.6 Procedure I. Testing to other shock profiles available upon request.

<sup>2</sup>Per MIL-STD-810G, Method 514.6; Category 24. Testing to other vibration curves available upon request.

<sup>3</sup>TBW figures are representative for 4GB capacity based on optimal usage model. Contact Delkin for life estimates on other capacities or using your specific usage parameters.

<sup>4</sup>Performance figures shown are for highest capacity configuration, and will vary by capacity, host, usage model and other factors.

## Features

### Utility microSD

- Compliant with SD Specification 3.0, backward compatible to 1.1 & 2.0
- Operating BUS modes – SPI and SD
- Advanced wear leveling and ECC
- SMART support
- SD Adapters available
- Customizable with custom pad printing, settings, content loading / duplication, etc.
- Compliant with European Union Directive 2011/65/EU (RoHS)

## PRODUCT APPLICATIONS

- **HEALTHCARE**
- **AEROSPACE**
- **TRANSPORTATION**
- **EMBEDDED COMPUTING**
- **GAMING**
- **INFOTAINMENT**
- **COMMUNICATIONS / NETWORKING**
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# Our Facility

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## Location

13350 Kirkham Way  
Poway, CA 92064

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**858.391.1234**

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