# DuraFlash™

# RD230m │ SD 6.1 │ microSD Card

SMART's DuraFlash, high-capacity, RD230m microSD Memory Cards are fully UHS-I compliant. The RD230m microSD Cards are offered in commercial, extended and industrial temperature with capacities from 16GB to 256GB for RD230m SE and from 4GB to 64GB for RD230m UE. They are specifically designed to meet strict industrial operating and environmental requirements as in IIoT, medical, automotive and military applications.

Incorporating onboard error detection and correction algorithms and static and dynamic wear-leveling techniques, SMART's RD230m microSD Cards ensure years of reliable operation over a product's life.

**3D TLC**

## Features & Benefits

- Capacities:
  - RD230m SE: 64GB to 256GB (SDXC), 16GB to 32GB (SDHC)
  - RD230m UE: 64GB (SDXC), 4GB to 32GB (SDHC)
- SD UHS-I Compliant
- Support C-Temp (0°C to +70°C), E-Temp (-25°C to +85°C) and I-Temp (-40°C to +85°C)
- Low Power Dissipation
- Onboard Wear-Leveling

## Applications

- Automotive
- IIoT
- Medical
- Military

## Product Family Overview

| Capacity | Sequential Performance |
|---|---|
| **RD230m SE | SD 6.1 | microSD Card** | |
| 64GB to 256GB (SDXC) | Up to 101MB/s Read; Up to 96MB/s Write |
| 16GB to 32GB (SDHC) | Up to 101MB/s Read; Up to 42MB/s Write |
| **RD230m UE | SD 6.1 | microSD Card** | |
| 64GB (SDXC) | Up to 95MB/s Read; Up to 85MB/s Write |
| 4GB to 32GB (SDHC) | Up to 95MB/s Read; Up to 85MB/s Write |

## Specifications

| | RD230m SE | RD230m UE |
|---|---|---|
| NAND Type | TLC | pSLC |
| **Performance** | | |
| Host Interface Rate (maximum) | SD 6.1 (SDR 104) | |
| Capacities | 64GB to 256GB (SDXC)<br>16GB to 32GB (SDHC) | 64GB (SDXC)<br>4GB to 32GB (SDHC) |
| Sequential Read (maximum) | Up to 101 MB/s | Up to 95 MB/s |
| Sequential Write (maximum) | Up to 96 MB/s (64GB to 256GB)<br>Up to 42 MB/s (16GB to 32GB) | Up to 85 MB/s |
| **Reliability** | | |
| MTBF | > 3,000,000 hours | > 3,000,000 hours |
| Data Reliability | < 1 Non-Recoverable Error in $10^{17}$ bits read | |
| Data Retention | 10 years >90% life remaining 1 year at the end of life | |
| Endurance<br>(Sequential Workload)[1] | 256GB: 700 TBW<br>128GB: 350 TBW<br>64GB: 175 TBW<br>32GB: 87 TBW<br>16GB: 43 TBW | 64GB: 1,680 TBW<br>32GB: 840 TBW<br>16GB: 420 TBW<br>8GB: 210 TBW<br>4GB: 105 TBW |
| **Environmental** | | |
| Shock | 1500 g half-sine, 0.5 msec, 1 shock along each axis,<br>X, Y, Z in each direction | |
| Vibration | 20G 80-2000Hz, 1.52mm 20-80Hz, 3 axis | |
| Storage Temperature | Commercial: 0°C to +70°C<br>Extended: -25°C to +85°C<br>Industrial: -40°C to +85°C | |
| Storage Temperature | -40°C to +85°C | |
| Humidity | 40°C, Operation: 90% RH, Storage: 93% RH | |
| **Physical** | | |
| Length | 15.0mm | |
| Width | 11.0mm | |
| Thickness | 1.0mm | |

[1]Endurance is directly related to the User Specific Workload.

## Ordering Information

| Part Number | Density |
|---|---|
| **RD230m SE | SD 6.1 | microSD Card**<br>**Commercial Operating Temperature (0°C to +70°C)** | |
| SV9UDEGPHJETC51 | 256GB |
| SV9UDDGPHJETC51 | 128GB |
| SV9UDCGPHJETC51 | 64GB |
| SV9UDBGPHJETC51 | 32GB |
| SV9UDAGPHJDTC51 | 16GB |
| **RD230m SE | SD 6.1 | microSD Card**<br>**Extended Operating Temperature (-25°C to +85°C)** | |
| SV9UDDGPHJETE51 | 128GB |
| SV9UDCGPHJETE51 | 64GB |
| SV9UDBGPHJETE51 | 32GB |
| SV9UDAGPHJDTE51 | 16GB |
| **RD230m SE | SD 6.1 | microSD Card**<br>**Industrial Operating Temperature (-40°C to +85°C)** | |
| SV9UDEGPHJETI51 | 256GB |
| SV9UDDGPHJETI51 | 128GB |
| SV9UDCGPHJETI51 | 64GB |
| SV9UDBGPHJETI51 | 32GB |
| SV9UDAGPHJDTI51 | 16GB |
| **RD230m UE | SD 6.1 | microSD Card**<br>**Commercial Operating Temperature (0°C to +70°C)** | |
| SV9UDCGPHJEUC51 | 64GB |
| SV9UDBGPHJEUC51 | 32GB |
| SV9UDAGPHJEUC51 | 16GB |
| SV9UD8GPHJEUC51 | 8GB |
| SV9UD4GPHJDUC51 | 4GB |
| **RD230m UE | SD 6.1 | microSD Card**<br>**Extended Operating Temperature (-25°C to +85°C)** | |
| SV9UDCGPHJEUE51 | 64GB |
| SV9UDBGPHJEUE51 | 32GB |
| SV9UDAGPHJEUE51 | 16GB |
| SV9UD8GPHJEUE51 | 8GB |
| **RD230m UE | SD 6.1 | microSD Card**<br>**Industrial Operating Temperature (-40°C to +85°C)** | |
| SV9UDCGPHJEUI51 | 64GB |
| SV9UDBGPHJEUI51 | 32GB |
| SV9UDAGPHJEUI51 | 16GB |
| SV9UD8GPHJEUI51 | 8GB |

### DuraFlash Product Grading System

**SE** Standard Endurance | **TLC**  **HE** High Endurance | **eTLC**  **PE** Premium Endurance | **eTLC (OP 28%)**  **UE** Ultra Endurance | **pSLC**

**SMART®** Modular Technologies

For more information, please visit: **www.smartm.com**