swissbit®

Product Fact Sheet

Industrial
MICRO SD Memory Card

S-200u Series
SPI and SD compliant

made in germany

S-200u Series
MICRO SD Memory Card

1 Feature summary

- Highly-integrated memory controller
  - Fully compliant with SD Memory Card specification 2.0 and Micro SD Memory Card specification 2.0 addendum
  - Four integrated 4KByte Sector buffers for fast data transfer
- Standard MICRO SD Memory Card form factor
  - 15.0mm x 11.0mm x 0.7mm
- 2.7...3.6V normal operating voltage
- Low-power CMOS technology
- Wear Leveling: equal wear leveling of static and dynamic data.
  The wear leveling assures that dynamic data as well as static data is balanced evenly across the memory. With that the maximum write endurance of the device is guaranteed.
- Patented power-off reliability
  - No data loss of older sectors
  - Max. 16 sectors data loss (old data kept) if power off during writing
- High reliability
  - Best available SLC NAND Flash technology
  - Designed for embedded market
  - MTBF: > 3,000,000 hours
  - Number of insertions: >10,000
  - Extended Temperature range: -25° up to 85°C
  - Industrial Temperature range: -40° up to 85°C
- Hot swappable
- High performance
  - SD burst up to 25MB/s
  - SD Low speed 0...25MHz clock rate
  - SD High speed 25...50MHz clock rate
  - Up to 21/18 MB/s sustained read/write speed
  - Flash burst up to 40MB/s
  - "Default speed cards" with disabled high speed mode available
- Available densities
  - 512MB up to 2GBytes
- Controlled BOM
- Life Time Monitoring SD/SPI with standard or vendor commands

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Revision: 1.01

System Performance

System Performance		typ	max	Unit
Burst Data transfer Rate (max clock 50MHz)			25	MB/s
Sustained Sequential Read	Firmware 6,7	19	21	
Sustained Sequential Write	Firmware 6,7	15	18	

Current Consumption @3.3V	typ	max	Unit
Write	50	70	mA
Read	40	60	
Sleep Mode	0.2	0.4	

Physical Dimensions

Physical Dimensions	value	Unit
Length	15.0±0.1	mm
Width	11.0±0.1	
Thickness	0.7 (1.0)±0.1	
Weight (typ.)	2	g

Recommended Temperature Conditions

Parameter	min	typ	max	Unit
Extended Operating Temperature	-25	25	85*)	°C
Industrial Operating Temperature	-40	25	85*)	°C
Storage Temperature	-40	25	100*)	°C

*) High temperature reduces the data retention time

Humidity and ESD

Parameter	Operating	Non Operating
Humidity (non-condensing)	max 95%	
ESD according to IEC61000-4-2 Human body model ±4 kV 100 pf/1.5 kOhm Machine model ±0.25 kV 200 pf/0 0hm	Non Contact Pads area: ±8 kV (coupling plane discharge) ±15 kV (air discharge) Human body model according to IEC61000-4-2	Contact Pads: ±4 kV, Human body model according to IEC61000-4-2

Durability

Parameter	Operating	Non Operating
Salt water spray	3% NaCl/35°C; 24h acc. MIL STD Method 1009	
Solar Exposure	1000W/m2	
UV Light Exposure	UV: 254nm, 15Ws/cm2	
Insertions / Drop test	>10,000/ 1.5m free fall	
Bending / Torque	10N / 0.15Nm or ±2.5deg	
Shock	1500G, 0,5ms, half sine wave ±xyz-axis, five pulses each Non operating, JESD22B110 Condition B	
Vibration	50G, 1.5mm p-p, 20..2000Hz, sweep xyz-axis, five pulses each, Non operating MIL-STD-883 M2007.3 Condition B	

For more information on SD Memory Card Spec 2.0, please visit SD association (www.sdcard.org)

Why Swissbit?

Swissbit strives to create innovative technologies for future market opportunities utilizing a highly skilled in-house product research and development team. Swissbit maintains a marketing edge by continuing to manufacture world-class high quality memory products and providing customers with both high value and low cost of ownership achieved through efficient processes and procedures.

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X-ON Electronics

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