



**THE DATASHEET OF  
SFSD4096N1BW1MT-I-DF-111-STD**



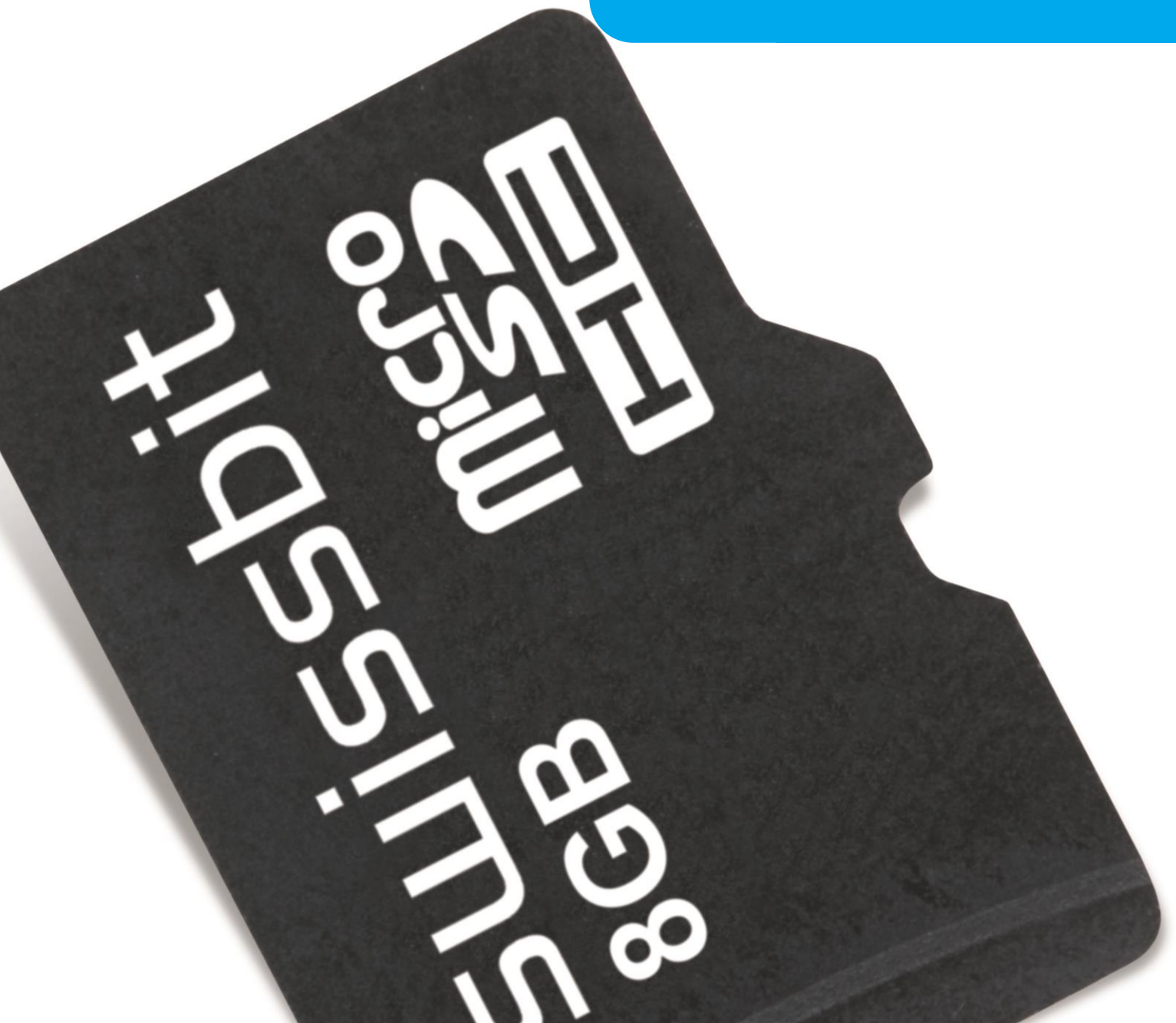
swissbit®

Product Fact Sheet

Industrial  
MICRO SD Memory Card

**S-300u Series**

SPI, SD and SDHC compliant



# S-300U SERIES

## MICRO SD Memory Card

### 1 Feature summary

- Highly-integrated memory controller
  - Fully compliant with SD Memory Card specification SD1.01, SD1.1, SD2.0 and SD3.01 and MICRO SD Memory Card Addendum 4.00
- Standard MICRO SD Memory Card form factor
  - 15.0mm x 11.0mm x 0.7mm
- Operating voltage 2.7...3.6V
- Low-power CMOS technology
- High reliability
  - 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
  - Speed class
    - 2GB Card speed class 6
    - 4GB, 8GB speed class 10
  - SD burst up to 25MB/s
  - SD Low/High speed 0...25/50MHz clock rate
  - Flash burst up to 40MB/s
  - Flash Bus interleave
- Operating bus modes: SD 1 & 4bit and SPI
- Error Correction up to 24bit/1KB BCH ECC
- 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.
- Write Endurance: Due to advanced wear leveling an even use of the entire flash is guaranteed, regardless how much "static" (0S) data is stored. Example: If the average file size is 10MByte and the total capacity is 8GByte, 48Mio write cycles can be performed.
- Available densities
  - 2, 4, and 8GBytes (SLC NAND Flash)
- Controlled BOM
- Life Cycle Management



### 2 Order Information

#### 2.1 Standard product list

Table 1: Standard Product List

| Density | general part number          | current part number revision |
|---------|------------------------------|------------------------------|
| 2GB     | SFSD2048NgBW1MT-t-ME-1x1-STD | SFSD2048N1BW1MT-t-ME-111-STD |
| 4GB     | SFSD4096NgBW1MT-t-DF-1x1-STD | SFSD4096N1BW1MT-t-DF-111-STD |
| 8GB     | SFSD8192NgBW1MT-t-QG-1x1-STD | SFSD8192N1BW1MT-t-QG-111-STD |

g defines the product generation

x defines the FW

t defines the temperature range (E=-25°C to +85°C, I=-40°C to +85°C)

## 3 System Specification

### 3.1 System Performance

| System Performance                            |         | typ                  | max                  | Unit |
|---|---------|----------------------|----------------------|------|
| Burst Data transfer Rate (max SD clock 50MHz) |         |                      | 25                   | MB/s |
| Sustained Sequential Read                     | 2GB     | 20 <sup>(1)(2)</sup> | 24 <sup>(1)(3)</sup> |      |
|   | 4...8GB | 20 <sup>(1)(2)</sup> | 24 <sup>(1)(3)</sup> |      |
| Sustained Sequential Write                    | 2GB     | 11 <sup>(1)(2)</sup> | 12 <sup>(1)(3)</sup> |      |
|   | 4...8GB | 17 <sup>(1)(2)</sup> | 22 <sup>(1)(3)</sup> |      |

1. All values refer to Micron Flash 8/16Gb MICRO SD Memory Card in SD mode 50MHz, cycle time 20ns,
2. Sustained Speed measured with USB-SD Memory Card reader. It depends on burst speed, flash number, and file size.
3. Maximum values were measured with Testmetrix tester.

### 3.2 Power Consumption

| Current Consumption @ 3.3V | Typ  | Max | Unit |
|----------------------------|------|-----|------|
| Write                      | 60   | 70  | mA   |
| Read                       | 50   | 60  |      |
| Sleep Mode                 | 0.15 | 2   |      |

### 3.3 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.)       | 0.4           | g    |

### 3.4 Recommended Temperature Conditions

| Parameter             | Min | Typ | Max | Unit |
|-----------------------|-----|-----|-----|------|
| Storage Temperature   | -25 | 25  | 85  | °C   |
| Operating Temperature | -25 | 25  | 85  | °C   |

### 3.5 Humidity and ESD

| Parameter                 | Operating  | Non Operating   |
|---------------------------|--|---|
| Humidity (non-condensing) | operation: 95% RH @25°C<br>storage: 93% RH @40°C, 500h   |   |
| EMC / EMI                 | <b>Non Contact Pads area:</b><br>±8 kV (air discharge)<br>Human body model according to IEC61000-4-2 | <b>Contact Pads:</b><br>±4 kV, Human body model according to IEC61000-4-2 |

### 3.6 Environmental Conditions

| Parameter         | Operating  | Non Operating |
|-------------------|--|---------------|
| UV light exposure | UV: 254nm, 15Ws/cm <sup>2</sup> according to ISO7816-1 |               |
| Durability        | 10,000 mating cycles                                   |               |
| Drop test         | 1.5m free fall   |               |
| Bending / Torque  | 10N / 0.10Nm ±2.5° max                                 |               |

For more information on SD Memory Card Spec 3.01, please visit SD association ([www.sdcard.org](http://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.

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View SFSD4096N1BW1MT-I-DF-111-STD on WIN SOURCE](#)
- ⊖ [Swissbit NA Inc. Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management