

# swissbit®

## Product fact sheet

### Industrial CompactFlash™ Card

### C-300 Series

up to UDMA4 / MDMA4 / PIO6

BU: Swissbit Group  
Date: March 18, 2016  
Revision: 1.00  
File: C-300\_fact\_sheet\_CF-  
HxBK\_Rev101.doc



# C-300 SERIES – UDMA COMPACTFLASH™ CARD, 64MBYTE UP TO 4GBYTE, 3.3/5V SUPPLY

## Main Features

- Highly-integrated memory controller
  - Fully compliant with CompactFlash™ specification 3.0, compatible with specification 4.1
  - Fully compatible with PCMCIA specification
  - PC Card ATA Interface supported
  - True IDE mode compatible
  - Up to PIO mode 6 supported
  - Up to MDMA4 supported
  - Up to UDMA4 supported
  - Hardware RS-code ECC (4 Bytes/528 Bytes correction)
  - Fix drive (IDE mode) & removable drive (PCMCIA mode) as default in the same card
- Small form factor
  - CFC Type I: 36.4mm x 42.8mm x 3.3mm
- Low-power CMOS technology
- 3.3V or 5.0V power supply
- Power saving mode (with automatic wake-up)
- S.M.A.R.T. support by \*-SMA product type
- 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.
- Data Retention: 10 year (JESD47)
- Patented power-off reliability
  - No data loss of older sectors
  - Max. 16 sectors data loss (old data kept) for 2k Page flash respectively
  - All data written to the flash if card status is ready after write command
- High reliability
  - Best available SLC NAND Flash technology
  - Designed for embedded market
  - MTBF: > 3,000,000 hours
  - Data reliability: < 1 non-recoverable error per 10<sup>14</sup> bits read
  - Number of insertions: > 10,000
- Hot swappable in PCMCIA modes
- High random performance
  - Up to 66MB/s burst transfer rate in UDMA4
  - Optimized for random access >150kB/s
  - Sustained Read/Write performance: up to 37/20MB/s (UDMA4)
- Available densities
  - up to 4GBytes (SLC NAND Flash)
- Operating System support
  - Standard Software Drivers operation CompactFlash™
- 2 Temperature ranges
  - Commercial Temperature range 0 ... +70°C
  - Industrial Temperature range -40 ... +85°C
- Controlled BOM



on request

## System Performance

| Parameter                                     | Typ.                            | Max.                        | Unit        |
|---|---------------------------------|-----------------------------|-------------|
| Sleep to write                                |                                 | 5                           | ms          |
| Sleep to read                                 |                                 | 5                           |             |
| Power up to Ready                             | <500                            | 1000                        |             |
| Reset to Ready (IDE Master)                   |                                 | 500                         |             |
| Data transfer Rate (UDMA4 burst)              |                                 | 66 (440X) <sup>(1)</sup>    | MB/s        |
| Sustained Read/Write 64 to 256, (measured)    | 20/13 <sup>(1)(2)</sup>         | 24/14 <sup>(1)</sup>        | MB/s (IOPS) |
| Sustained Read/Write 512 to 2048MB (measured) | 35/18 <sup>(1)(2)</sup>         | 37/20 <sup>(1)</sup>        |             |
| 4k Random Read/Write 64 to 256MB (measured)   | 11/0.13 (32) <sup>(1)(2)</sup>  | 13/0.20(50) <sup>(1)</sup>  |             |
| 4k Random Read/Write 512 to 2048MB (measured) | 11/0.065 (16) <sup>(1)(2)</sup> | 13/0.08 (20) <sup>(1)</sup> |             |
| Command to DRQ                                | Read                            | 100                         | µs          |
|   | Write                           | 30                          |             |

(1) All values refer to Micron Flash, CFC in UDMA mode 4, cycle time 30ns, write/read file sequential transfer 256 sectors/command or random 8 sector/command

(2) Sustained Speed depends on flash type and number, file size, and burst speed

| Current Consumption <sup>(3)</sup> @ 3.3V | Typ. | Max. | Unit |
|---|------|------|------|
| Read (UDMA4)                              | 80   | 130  | mA   |
| Write (UDMA4)                             | 80   | 130  |      |
| Idle Mode                                 | 0.5  | 1.5  |      |

(3) All values are typical at 25° C and nominal supply voltage and refer to 4GByte 2 channel CFC.

## Physical Dimensions

| Parameter     | Value | Unit |
|---------------|-------|------|
| Width         | 36.4  | mm   |
| Height        | 42.8  |      |
| Thickness     | 3.3   |      |
| Weight (typ.) | 10    | g    |

## Environmental Specifications

| Parameter                 | Operating   | Non Operating |
|---------------------------|---|---------------|
| Temperature (commercial)  | 0 to 70°C   | -40 to 85°C   |
| Temperature (industrial)  | -40 to 85°C   | -50 to 100°C  |
| Humidity (non-condensing) | 85% RH 85°C, 1000 hrs (JEDEC JESD22, method A101-B)   |               |
| Vibration (peak -to-peak) | 20 G peak, 20-2000Hz, 4 per direction (JEDEC JESD22, method B103), 5.35G RMS, 15 min per plane (IEC 68-2-6) |               |
| Shock                     | 1.5k G peak, 0.5ms 5 times (JEDEC JESD22, method B110)<br>30 G, 11ms 1 time (IEC 68-2-27)                   |               |

## Capacity specification

| Capacity | cylinders | heads | Sectors/track | Sectors_drive | Total addressable capacity (Byte) |
|----------|-----------|-------|---------------|---------------|-----------------------------------|
| 64MB     | 490       | 8     | 32            | 125,440       | 64,225,280                        |
| 128MB    | 937       | 8     | 32            | 239,872       | 122,814,464                       |
| 256MB    | 980       | 16    | 32            | 501,760       | 256,901,120                       |
| 512MB    | 993       | 16    | 63            | 1,000,944     | 512,483,328                       |
| 1GB      | 1,986     | 16    | 63            | 2,001,888     | 1,024,966,656                     |
| 2GB      | 3,970     | 16    | 63            | 4,001,760     | 2,048,901,120                     |
| 4GB      | 7,964     | 16    | 63            | 8,027,712     | 4,110,188,544                     |

## System Reliability

| System Reliability and Maintenance |  |
|------------------------------------|--|
| MTBF (at 25°C)                     | > 3,000,000 hours  |
| Data Reliability                   | < 1 Non-Recoverable Error per 10 <sup>14</sup> bits Read |

### 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.

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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