



Archon CFast

(SATA, CFast, TLC, Commercial)

Product Datasheet

Commercial Series

SATA3 – 6Gb/s

Commercial Temperature Grade -5°C - 70°C

Revision History

Revision	Description	Date
001	First Released	Oct 11 rd , 2021
002	Add sustained performance	Jun 15 rd , 2021

Archon CFast

Product Specification

- Capacity
 - 512GB / 1TB
- Components
 - Controller: Marvell 88SS1079
 - Flash: 3D TLC
 - DRAM: DDR3
- Compliance
 - SATA 3.2 compatible with 6/3/1.5 Gb/s rates
- Performance (up to) *
 - Burst Read: 560 MB/s
 - Burst Write: 500 MB/s
 - Sustained Read: 560 MB/s
 - Sustained Write: 500 MB/s
 -
- Reliability
 - Advanced LDPC error correction
 - Global static and dynamic wear leveling
 - UBER: 1 sector per 10^{17} bits read
 - MTBF: 2.0 Million Hours
- Endurance
 - TBW : up to 600TB (with 1TB)
- Data Retention
 - JESD47 Compliant
- Mechanical Form Factor
 - 42.8 mm x 36.4 mm x 3.6 mm
- Environment
 - Operating temperature: $-5^{\circ}\text{C} \sim 70^{\circ}\text{C}$
 - Storage temperature: $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$
- Shock & Vibration
 - Operating:
50G (11ms duration, half sine wave)
 - Non-Operating:
1500G (0.5ms duration, half sine wave)
 - Vibration: 10G (Peak, 10~2000Hz)
- Warranty
 - 5 years

Specifications subject to change without notice.

*(1) Actual performance may vary based on hardware, software, and overall system configuration.

(2) Sequential performance is measured with 128KB transfer size, QD 32 and 4KB align with IO Meter.

(3) Random performance is sustained performance measured with 4K/8K transfer size, QD 32 and 4KB align with IO Meter.

(4) Performance Test Platform: CPU - Intel Core i7 4770K, Mother Board - ASUS Z87-DELUXE, Chipset - Intel Z87 Express,
OS - Windows 8.1 Pro x64

1. Ordering Information

The following Tables list the part No. for Exascend Archon series CFast

Table 1 Archon series CFast product list

Part Number	Capacity	Flash Type	Form Factor
EXSC3X512GB	512GB *	3D TLC	CFast
EXSC3X001TB	1TB **	3D TLC	CFast

*1GB=1,000,000,000 Bytes

**1TB=1,024GB

2. Product Specifications

2.1 Capacity

Table 2 User Addressable Sectors

Archon CFast Series	Unformatted Capacity (Total User Addressable Sectors in LBA mode)
512B	1,000,215,216
1TB	2,000,409,264

Notes:

- (1) LBA count shown represents total user storage capacity and will remain the same throughout the life of the drive.
- (2) The total usable capacity of the SSD may be less than the total physical capacity because a small portion of the capacity is used for NAND flash management and maintenance purposes.

2.2 Performance

Table 3 Drive Performance – Archon CFast

Parameter	Capacity		Unit
	512GB	1TB	
Burst Read	560	560	MB/s
Burst Write	500	500	MB/s
Sustained Read	560	560	MB/s
Sustained Write	500	500	MB/s

Specifications subject to change without notice.

Notes:

- (1) Drive is connected as secondary
- (2) Actual performance may vary based on hardware, software, and overall system configuration.
- (3) Sequential performance is measured with 128KB transfer size, QD 32 and 4KB align with IO Meter.
- (4) Random performance is sustained performance measured with 4K/8K transfer size, QD 32 and 4KB align with IO Meter.
- (5) Test Platform: CPU - Intel Core i7 4770K, Mother Board - ASUS Z87-DELUXE, Chipset - Intel Z87 Express, OS - Windows 8.1 Pro x64

3. Environment Specifications

Table 4 Environmental Specification Table

Parameter	Value
Operating Temperature	-5° ~ 70° C
Storage Temperature	-40° ~ 85° C
Power Supply Voltage Range	3.3V ± 5%
Humidity (non-condensing)	5%~95% (Operating)
Vibration	10G(Peak,10~2000Hz)
Shock (Operating)	50G, (11ms duration, half sine wave)
Shock (Non-Operating)	1500G, (0.5ms duration, half sine wave)

4. Physical Dimension Diagram

CFast Card

Figure 1: Physical Dimension Diagram for CFast board

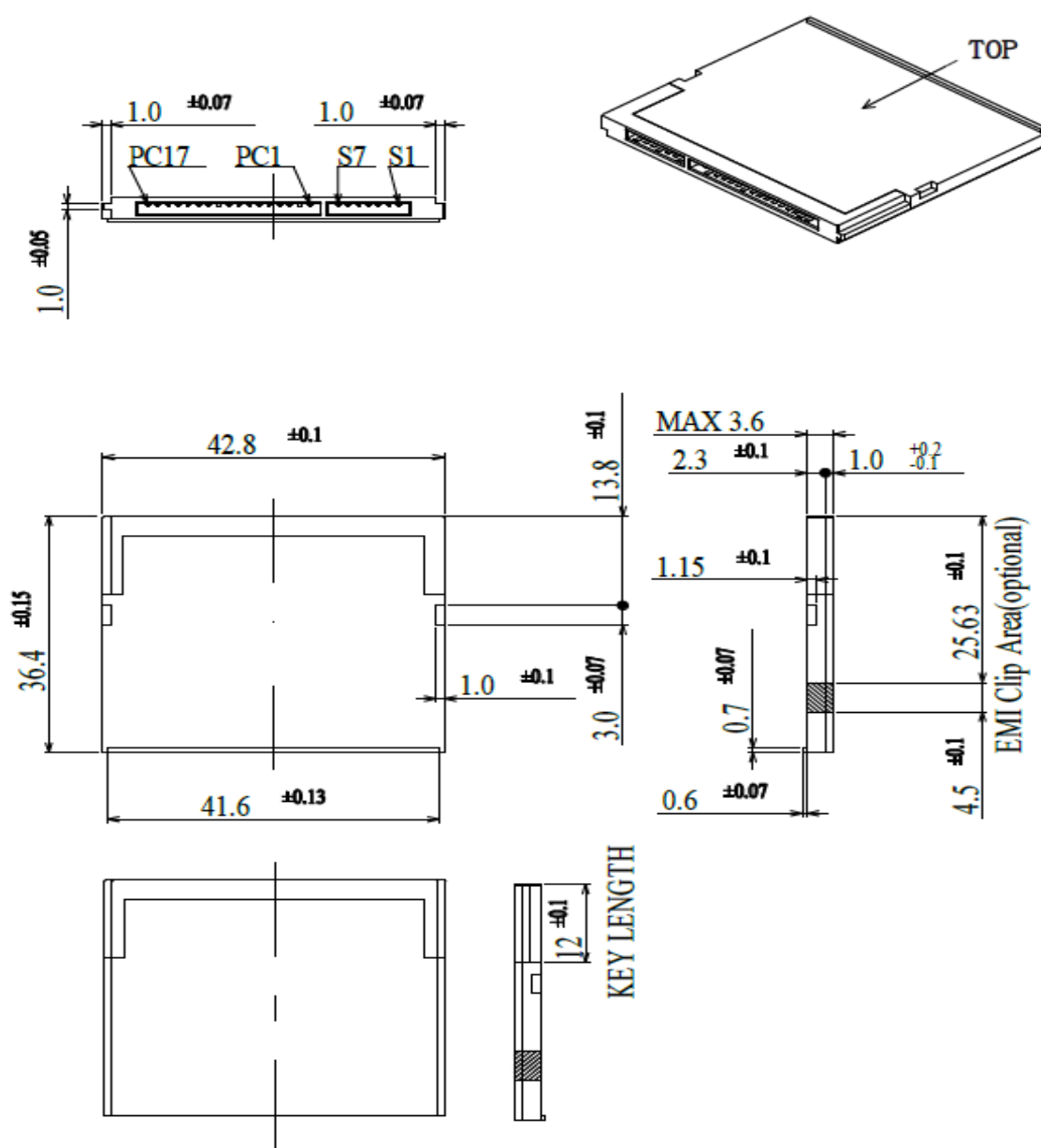


Table 5 Physical Dimension for CFast card

Physical Dimensions	Value	Unit
Length	42.8	mm
Width	36.4	mm
Thickness	3.6	mm

5. Standards Compliance

Exascend Archon CFast card complies with following standards:

FCC

CE

RoHS

Warranty Terms

We offer a five (5) years limited warranty for our commercial CFast products.

The warranty period is the SHORTER OF:

- a period of five (5) years beginning from the date of purchase; or
- the period ending when the drive reached advertised DWPD or TBW rating; or
- The period ending when device's Lifespan indicator reaches an abnormal value.

This Limited Warranty will not apply to, and Exascend will have no liability or obligation with respect to, problems or damage resulting from any of the following: (i) accident, modification, neglect, abuse, careless or incorrect handling, misuse or improper operation, disassembly, misapplication or use in unusual physical environments or under operating conditions not approved by Exascend (including, but not limited to, use of the Product with an improper voltage supply); (ii) normal wear and tear; (iii) removal of label(s) or sticker(s) provided on or with the Product (including all warranty or quality-control stickers, product serial or electronic numbers); (iv) problems relating to or residing in non-Exascend hardware, software or other items with which the Product is used; (v) use in an environment, in a manner or for a purpose for which the Product was not designed or not in accordance with Exascend's published documentation; (vi) installation, modification, alteration or repair by anyone other than Exascend or its authorized representatives; (vii) problems that do not relate to materials or workmanship or that have an insignificant impairment on the use or operation of the Product; or (viii) problems related to consumables; (ix) Product purchased "AS-IS" or "with known faults, defects or problems." Additionally, Exascend will have no liability or obligation to recover any data in the Product.

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Exascend shall not be liable for any loss, injury or damage caused by use of the products in any of the following applications.

- **Medical related devices, life support, medical measurement devices, etc.**
- **Control device for train, ship, mass transportation system or automotive vehicles, etc.**
- **Specific applications, military/defense related equipment, aerospace, nuclear facility control system, etc.**
- **Safety system for disaster prevention/crime prevention, etc.**

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