

UD info Corp.

USB FLASH DISK UF3-ALUM Series Product DataSheet

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Revision History

Revision	Draft Date	History	Author
1.0	2024/12/10	New release	Migo.Huang



Product Overview

- **Capacity**

- BiCS5 TLC: 128GB up to 2TB

- **USB Interface**

- USB 3.2 Gen 2x1 (10Gbps)
- Compliance with USB 3.2 Gen1 (5Gbps)
- Compliance with USB 2.0 (480Mbps)
- Compliance with USB 1.1 (12Mbps)

- **Flash Interface**

- Flash Type: BiCS5 TLC

- **Performance**

- Sequential read: Up to 1040 MB/sec
- Sequential write: Up to 990 MB/sec

- **Power Consumption^{Note1}**

- Active mode < 2,400 mW
- Idle mode < 740 mW

- **Advanced Flash Management**

- Built-in hardware Low Density Parity-Check (LDPC) ECC
- Global Wear Leveling
- Power Failure Management
- Hyper Cache Technology
- SMART Read Refresh™

- **Supports Non-Removable Setting**

- **Temperature Range**

- Operation Range:
Standard grade 0°C ~ 70°C
Wide grade -40~85 °C
- Storage Range: -40~85 °C

Notes:

1. Please see "Power Consumption" for details.

1. INTRODUCTION

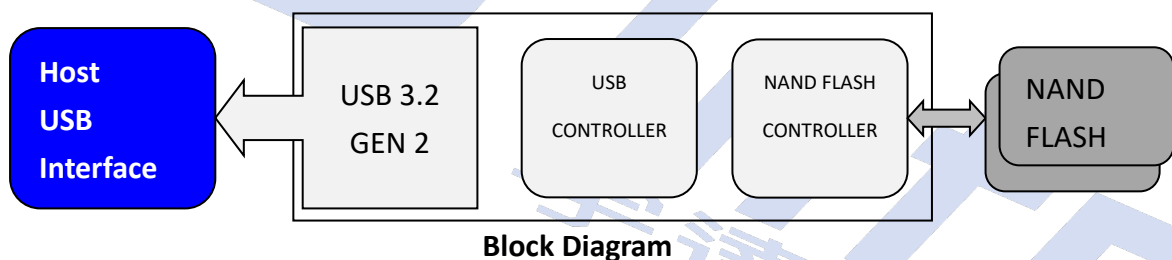


1.1. General Description

The UF3-ALUM is a high performance, new generation USB flash drive compatible with the latest USB specification – USB 3.2 Gen2 Super Speed, with a maximum transfer rate of 10 Gb/s designed to replace a conventional hard disk drive. The connector is backward compatible with USB 3.2 and USB 2.0 interfaces. With compliance with USB 3.2 specification, this USB drive can deliver up to 1000MB/s and sequential write performance is up to 980MB/s

Utilizing 3D NAND for capacity up to 2TB and providing more power efficiency than 2D NAND, UF3-UM can be plugged into a standard Embedded USB connector commonly found in desktops, portable PC systems and industrial PC systems. Regarding reliability, UF3-UM is implemented with LDPC (Low Density Parity Check) ECC engine to extend SSD endurance and increase data reliability. With exquisite size and robust metal housing, UF3-UM prevents mechanical interference and enhances environment and ESD protection.

1.2. Block Diagram



2. PRODUCT SPECIFICATIONS



- **Capacity available**
 - ◆ BiCS5 TLC: 128GB-2TB
- **Operation temp.**
 - ◆ Standard: 0 ~ 70°C
 - ◆ Wide: -40 ~ 85°C
- **Storage temp.**
 - ◆ -40 ~ 85°C
- Support Windows XP and later version
- Support MAC OS 10.8 and later version
- Support Linux Kernel ver 2.4.10 and later version
- No external power is required - DC 4.5V ~ 5.5V from USB port.
- Hot Plug & Play without driver installation
- **Transfer rate for USB interface**
 - USB 3.2 Gen 2(10Gbps)
 - Compliance with USB 3.2 Gen1 (5Gbps)
 - Compliance with USB 2.0 (480Mbps)
 - Compliance with USB 1.1 (12Mbps)
- **Performance**

Flash Type	Capacity	Performance (MB/s)	
		CrystalDisk	
		Read	Write
BiCS5 TLC	128GB	800	280
	256GB	1040	930
	512GB	1040	970
	1024GB	1040	990
	2048	930	910

The above values are for reference only, it may change according to the flash memory used.

3. ENVIRONMENTAL SPECIFICATIONS



3.1. Environmental Conditions

3.1.1. Temperature and Humidity

- Temperature:
 - ◆ Storage: -40°C to 85°C
 - ◆ Operational (Standard grade): 0°C to 70°C
 - ◆ Operational (Wide grade): -40°C to 85°C

- Humidity:
 - ◆ Standard grade: RH 90% under 40°C (operational)
 - ◆ Wide grade: RH 95% under 55°C (operational)

■ High Temperature Test Condition

	Temperature	Humidity	Test Time
Operation (Standard)	70°C	0% RH	72 hours
Operation (Wide)	85°C	0% RH	168 hours
Storage (Standard)	85°C	0% RH	72 hours
Storage (Wide)	85°C	0% RH	168 hours

Result: No any abnormality is detected.

■ Low Temperature Test Condition

	Temperature	Humidity	Test Time
Operation (Standard)	0°C	0% RH	72 hours
Operation (Wide)	85°C	0% RH	168 hours
Storage (Standard)	-40°C	0% RH	72 hours
Storage (Wide)	-40°C	0% RH	168 hours

Result: No any abnormality is detected.

■ High Humidity Test Condition

	Temperature	Humidity	Test Time
Operation (Standard)	40°C	93% RH	24 hours
Storage (Wide)	55°C	95% RH	96 hours
Storage (Standard)	40°C	95% RH	72 hours
Storage (Wide)	55°C	95% RH	96 hours

Result: No any abnormality is detected.

■ Temperature Cycle Test

	Temperature	Test Time	Cycle
Operation (Standard)	0°C	30 min	10 cycles
	70°C	30 min	
Operation (Wide)	-40°C	30 min	10 cycles
	85°C	30 min	
Storage (Standard)	-40°C	30 min	10 cycles
	85°C	30 min	

Result: No any abnormality is detected.

4. ELECTRICAL SPECIFICATIONS

4.1. Absolute Maximum Ratings

Parameter	Min	Typ	MAX	Unit
Operating Temperature	0	+25	+70	°C
Storage Temperature	-40	+25	+85	°C
Operating Temperature	-40	+25	+85	°C
Storage Temperature	-40	+25	+85	°C
1.1V regulator power supply	1.04	1.12	1.20	V
1.8V regulator power supply	1.76	1.86	2.0	V
3.3V Regulator Power Supply	3.15	3.3	3.45	V
5.0V Regulator Power Supply	3.0	5.0	5.5	V
2.5V Regulator Power Supply	2.35	2.5	2.7	V
1.2V Regulator Power Supply	1.13	1.2	1.3	V

4.2. Power Consumption

Power Consumption (mW)		
Read (Max.)	Write (Max.)	Idle (Max.)
2040	2400	740

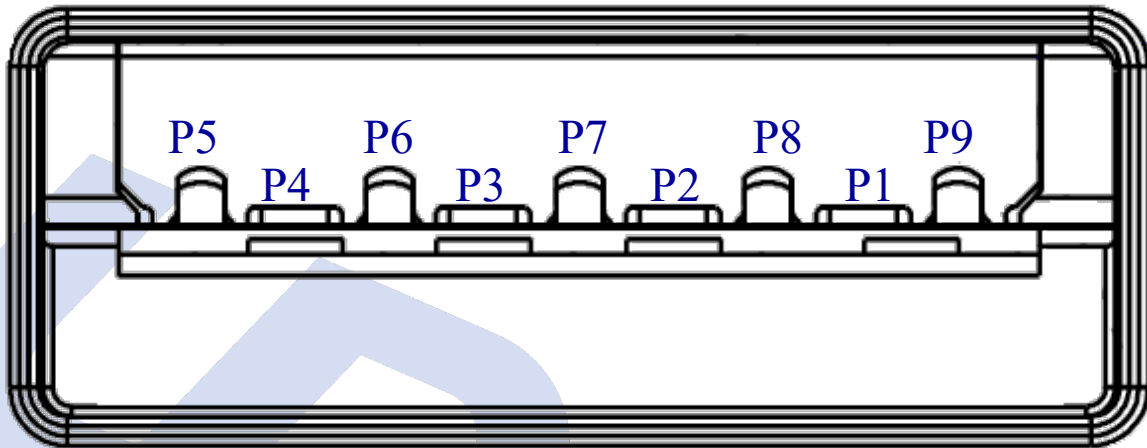
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5. INTERFACE

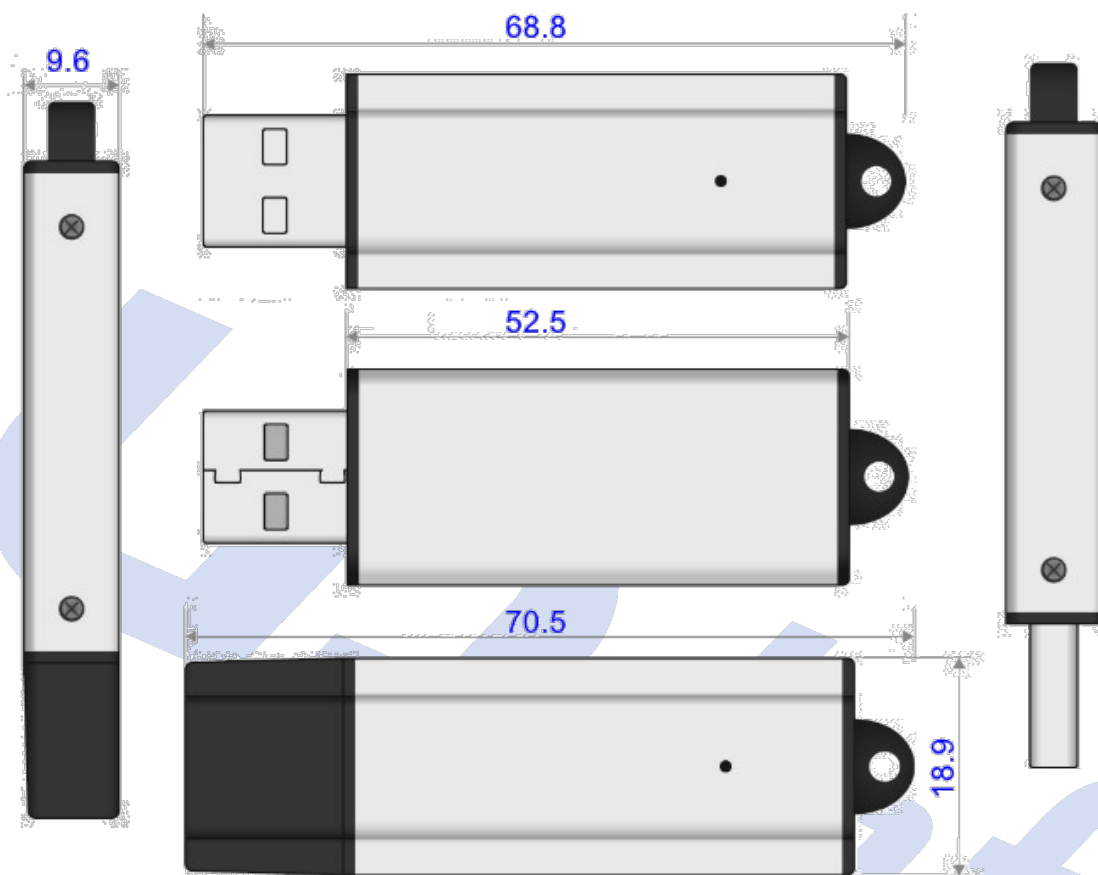


5.1. Pin Assignment and Descriptions



Pin Number	Type	Function
P1	V _{BUS}	Power
P2	D-	USB 2.0 differential pair
P3	D+	USB 2.0 differential pair
P4	GND	Ground
P5	StdA_SSRX-	SuperSpeed receiver differential pair
P6	StdA_SSRX+	SuperSpeed receiver differential pair
P7	GND_DRAIN	Ground
P8	StdA_SSTX-	SuperSpeed receiver differential pair
P9	StdA_SSTX+	SuperSpeed receiver differential pair
Shell	Shield	Connector Shell

6. PHYSICAL DIMENSION



Unit: mm

7. PARTNUMBER DECODER



UF3- ALUMX⁸X⁹X¹⁰X¹¹X¹²X¹³X¹⁴X¹⁵

X ¹ X ² X ³	X ⁴ X ⁵	X ⁶ X ⁷	X ⁸ X ⁹ X ¹⁰ X ¹¹ X ¹²	X ¹³	X ¹⁴	X ¹⁵
UF3	AL	UM	128GB 256GB 512GB 001TB 002GB	A: 3D TLC Standard (0°C ~ +70°C) B: 3D TLC Industrial (-40°C ~ +85°C)	F: Fixed	U