

SD UHS-II V60

SD V60 Catalyst Series

Specifications

Capacity

- 128GB/256GB/512GB/1TB

Flash Type

- 3D TLC

Bus Speed Mode

- UHS-II (HD312/FD156)
- Backward compatibility with UHS-I cards

Power Consumption Note

- UHS-I Mode
- Power Up Current < 250uA
- Standby Current < 1000uA
- Read Current < 400mA
- Write Current < 400mA
- UHS-II Mode
- Power Up Current
- Standby Current
 - ✓ Hibernate Mode
 - ✓ w/o Hibernate Mode
- Read Current
- Write Current

CPRM Optional (Content Protection for Recordable Media)

Advanced Flash Management

- Static and Dynamic Wear Leveling
- Bad Block Management

Write Protect with mechanical switch

- Supply Voltage
 - ✓ VDD1: 2.7V ~ 3.6V
 - ✓ VDD2: 1.7V ~ 1.95V

Temperature Range

- Operating temperature: -25°C ~ 85°C
- Storage temperature: -40°C ~ 85°C

RoHS compliant

- FCC / CE / RoHS

EMI compliant

Warranty

- Lifetime-limited warranty ³

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Product datasheet

1. Order information

PART NUMBER	CAPACITY*	FLASH TYPE	FORM FACTOR
EX128GSDV60	128GB *	3D TLC	SD UHS-II V60
EX256GSDV60	256GB *	3D TLC	SD UHS-II V60
EX512GSDV60	512GB *	3D TLC	SD UHS-II V60
EX1TSDV60	1TB *	3D TLC	SD UHS-II V60

2. Performance

	SD UHS-II V60 (Catalyst)			
Capacity	128GB	256GB	512GB	1TB
Burst Read (MB/s)	280	280	280	280
Burst Write (MB/s)	100	180	150	150
Form factor	SD UHS-II V60			

3. Power Consumption

3-1 Power Consumption of SD card (UHS-I Mode)

Bus Speed Mode		Max. Power Up	Max. Standby	Max. Read	Max. Write
		Current (uA)	Current (uA)	Current (mA)	Current (mA)
Default Speed Mode		250	1000	150 @ 3.6V	150 @ 3.6V
High Speed Mode		250	1000	200 @ 3.6V	200 @ 3.6V
UHS-I Mode	UHS50 / DDR50	250	1000	400 @ 3.6V	400 @ 3.6V
	UHS104 / DDR50	250	1000	400 @ 3.6V	400 @ 3.6V

*Power consumptions are measured at room temperature.

*For SDXC, up to 100mA from VDD1 when XPC=0; up to 150mA from VDD1 when XPC=1.

3-2 Power Consumption of SD card (UHS-I Mode)

Bus Speed Mode		Max. Power Up Current (uA)		Max. Standby Current (uA)				Max. Read Current (mA)		Max. Write Current (mA)	
				w/o Hibernate Mode		Hibernate Mode					
		VDD1	VDD2	VDD1	VDD2	VDD1	VDD2	VDD1	VDD2	VDD1	VDD2
UHS-II	FD156	500	200	1380	120	80	120	200	50	200	50
Mode	HD312	500	200	1380	120	80	120	200	50	250	50

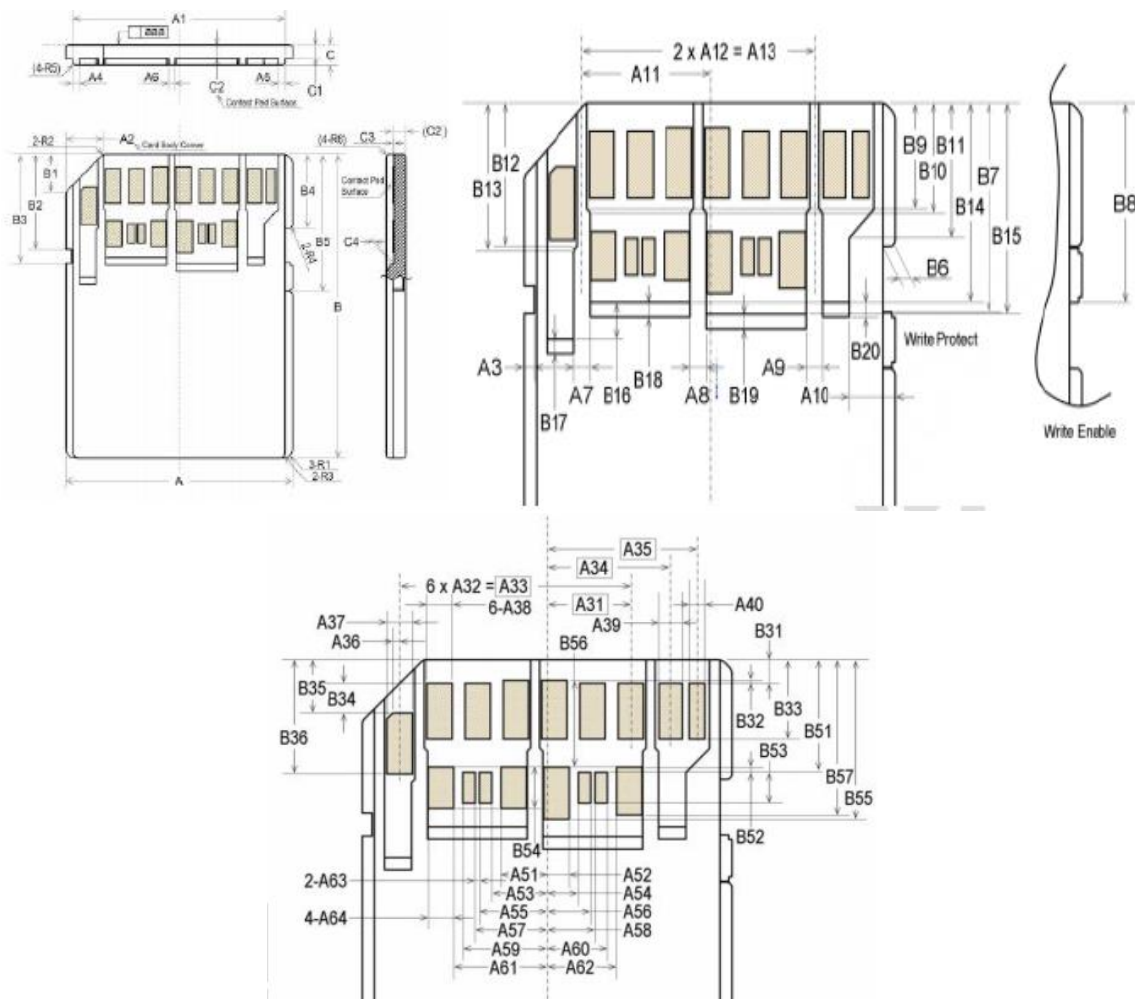
3-3 SD card Peak Power Consumption (UHS-II Mode)

Bus Speed Mode		Max. Power Up Current (uA)		Max. Standby Current (uA)				Max. Read Current (mA)		Max. Write Current (mA)	
				w/o Hibernate Mode		Hibernate Mode					
		VDD1	VDD2	VDD1	VDD2	VDD1	VDD2	VDD1	VDD2	VDD1	VDD2
UHS-II	FD156	1000	650	1380	120	80	120	350	50	400	50
Mode	HD312	1000	650	1380	120	80	120	350	50	450	50

*Power consumptions are measured at room temperature.

4. Physical Dimension Diagram

32mm(L)x24mm(W)x2.1mm(H)



SYMBOL	COMMON DIMENSIONS			NOTE
	MIN	NOM	MAX	
A	23.9	24.0	24.1	
A1	22.4	22.5	22.5	
A2	3.85	4.00	4.15	
A3	0.60	0.75	0.90	
A4	0.55	0.70	0.85	
A5	0.55	0.70	0.85	
A6	0.45	0.60	0.75	
A7	0.90	1.05	1.20	
A8	0.90	1.05	1.20	
A9	0.90	1.05	1.20	
A10	2.85	3.00	3.15	
A11	7.975	8.125	8.275	
A12	-	7.50	-	
A13	14.85	15.00	15.15	
A31	-	5.625	-	BASIC
A32	-	2.5	-	
A33	-	15.00	-	BASIC
A34	-	8.05	-	BASIC
A35	-	9.75	-	BASIC
A36	0.25	-	-	
A37	1.40	-	-	
A38	1.40	-	-	
A39	1.10	-	-	
A40	0.90	-	-	
A51	2.675	2.825	2.975	
A52	1.425	1.575	1.725	
A53	3.325	3.475	3.625	
A54	2.075	2.225	2.375	
A55	4.125	4.275	4.425	
A56	2.875	3.025	3.175	
A57	4.325	4.475	4.625	
A58	3.075	3.225	3.375	
A59	5.125	5.275	5.425	
A60	3.875	4.025	4.175	
A61	5.775	5.925	6.075	
A62	4.525	4.675	4.825	
A63	0.20	-	-	*8
A64	1.65	-	1.85	

1. Dimensions are in millimeters.
2. VDD2 pad must not be connected with the contact pins for xD of a combo connector.
3. Whichever of VDD1 and VDD2 may be connected first.
4. However, the legacy signal pins should be connected after VDD1.
5. The UHS-II signal pins should be connected after VDD2.
6. When a card is pushed in front of the lock position, the signal and GND contact pins are allowed to disconnect once.
7. Also refer to detailed description of Standard Size SD Card Mechanical Specification Version 3.00 for the legacy shape portion.
8. This is a double dimension. It shall satisfy this rule, after satisfying other rules.

5. Compliance

Exascend SD V60 memory card complies with the following specifications:

- FCC
- CE
- RoHS

Legal information

Limited Warranty Policy

Exascend Corporation ("Exascend") warrants that Exascend's product, in its original sealed packaging, will be free from defects in materials and workmanship. Subject to the conditions and limitations set forth below, Exascend will either repair or replace any part of its products that prove defective by reason of improper workmanship or materials. This warranty is non-transferable and valid only for the original purchaser of the Exascend products, except where prohibited by law. An original or copy sales receipt or invoice is required to establish purchase date and original purchaser.

1. This warranty supersedes all other warranties and representations, whether oral or written, between you and Exascend. Exascend makes no other warranties, including any warranty of merchantability or fitness for a particular purpose, whether expressly or implied.
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Warranty Terms

We offer limited-lifetime warranty for our SD cards.

The warranty period is the SHORTER OF:

- a period of lifetime beginning from the date of purchase; or

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:

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- Control devices for trains, ships, mass transportation systems or automotive vehicles, etc.
- Specific applications including military/defense-related equipment, aerospace, nuclear facility control systems, etc.
- Safety systems for disaster prevention/crime prevention, etc.

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Contact information

Exascend Taiwan Office

Address: Room 1, 6F, No.288, Sec. 6, Civic Blvd., Xinyi Dist., Taipei City 110, Taiwan (R.O.C.)

General Support: +886-2-2726-6500

Fax: +886-2-2726-6126

Email: sales@exascend.us

Revision history

Table 1: Catalyst SD V60 datasheet revision history

REVISION	DESCRIPTION	DATE
001	First released	Apr, 2022
002	Add capacity	Aug, 2022
003	Modify temperature	Feb, 2024
004	Format & email updated	Jun, 2024
005	Update storage temperature	Aug., 2024