



IDC3B-XXXGX
SD Memory Card
4GB、8GB、16GB、32GB

ADATA Technology Corp.

SD Memory Card

Datasheet

IDC3B-XXXGX

4GB、8GB、16GB、32GB

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4GB 、 8GB 、 16GB 、 32GB

Revision History

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1.0 Product Description

1.1 Product Overview

The ADATA IDC3B SD Memory Card is to save every precious, tender, and romantic moment. You may purchase high resolution digital camera, digital camcorder, or other high-end devices. However, normal Secure Digital Cards (SD Cards) on the market today may not let you capture these moments because of slow read/ write speed. Slow read/write speed may cause lag time between shots, resulting in missing the opportunity to record some of your finest memories. This ADATA SD Memory Card, rated a UHS-1 performance card which means the card has a guaranteed read/write speed of at least 10MB/s, will reduce working time between shots. For those high-end digital devices users, ADATA SD Memory Card will ensure you capturing every perfect moment.

2.0 Features

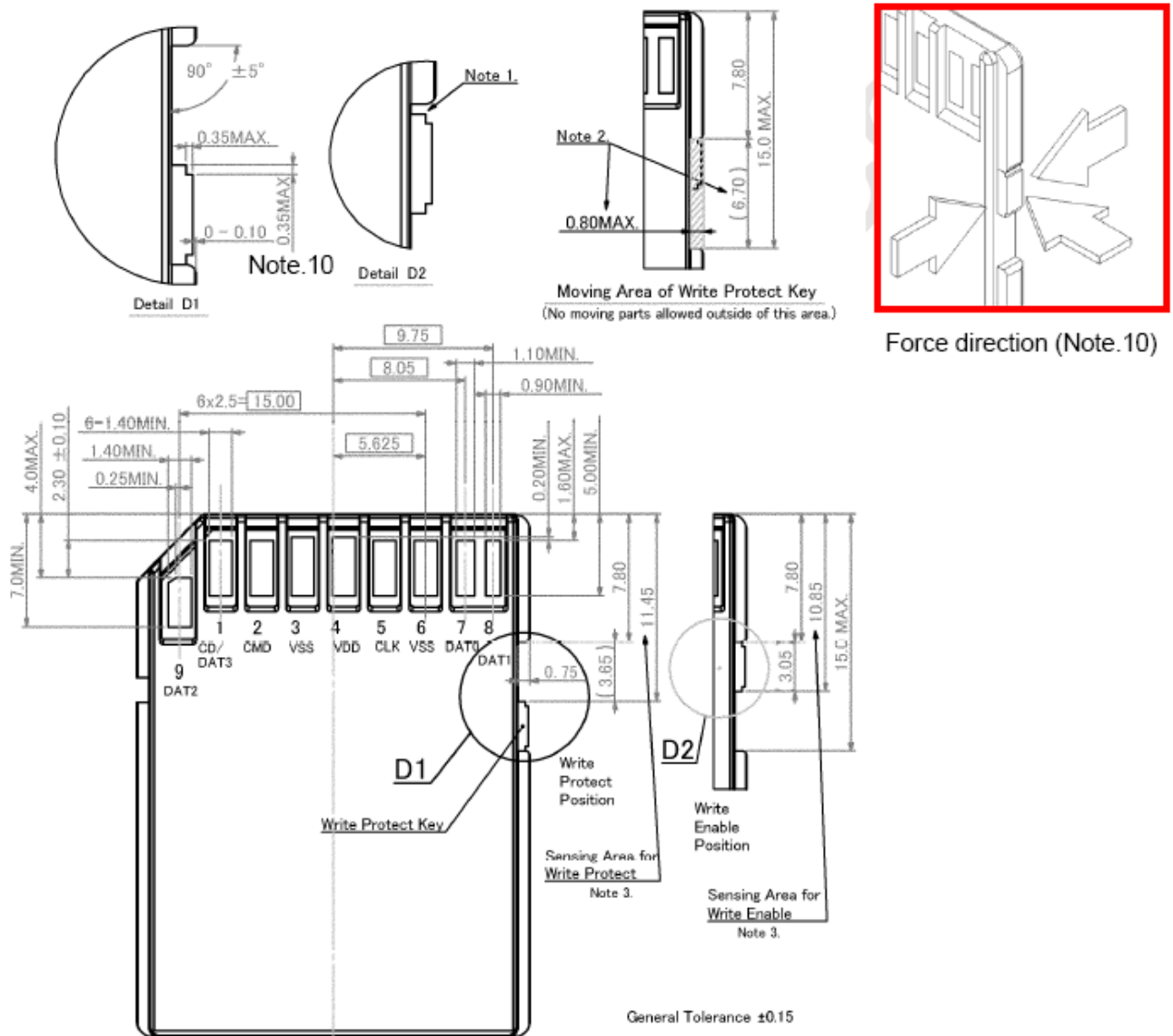
- Supports SD specification v2.x/ v3.x
- Capacity : 4GB / 8GB / 16GB / 32GB
- Applicable for dual host voltage (3.3V) & (1.8V)
- Support CPRM code
- UHS speed class 1
- Hardware BCH Error Correcting Code (ECC) engine, Configurable ECC up to 72-bit
- Compatible with all PC Card Services and Socket Services
- Support Error Correcting Code (ECC) function to detect and correct errors.
- Support In System Programming (ISP) function to load the firmware.
- Enhanced ESD design
- Ensured Manufacturing Facilities
- Support Wear Leverage function to maximize data endurance

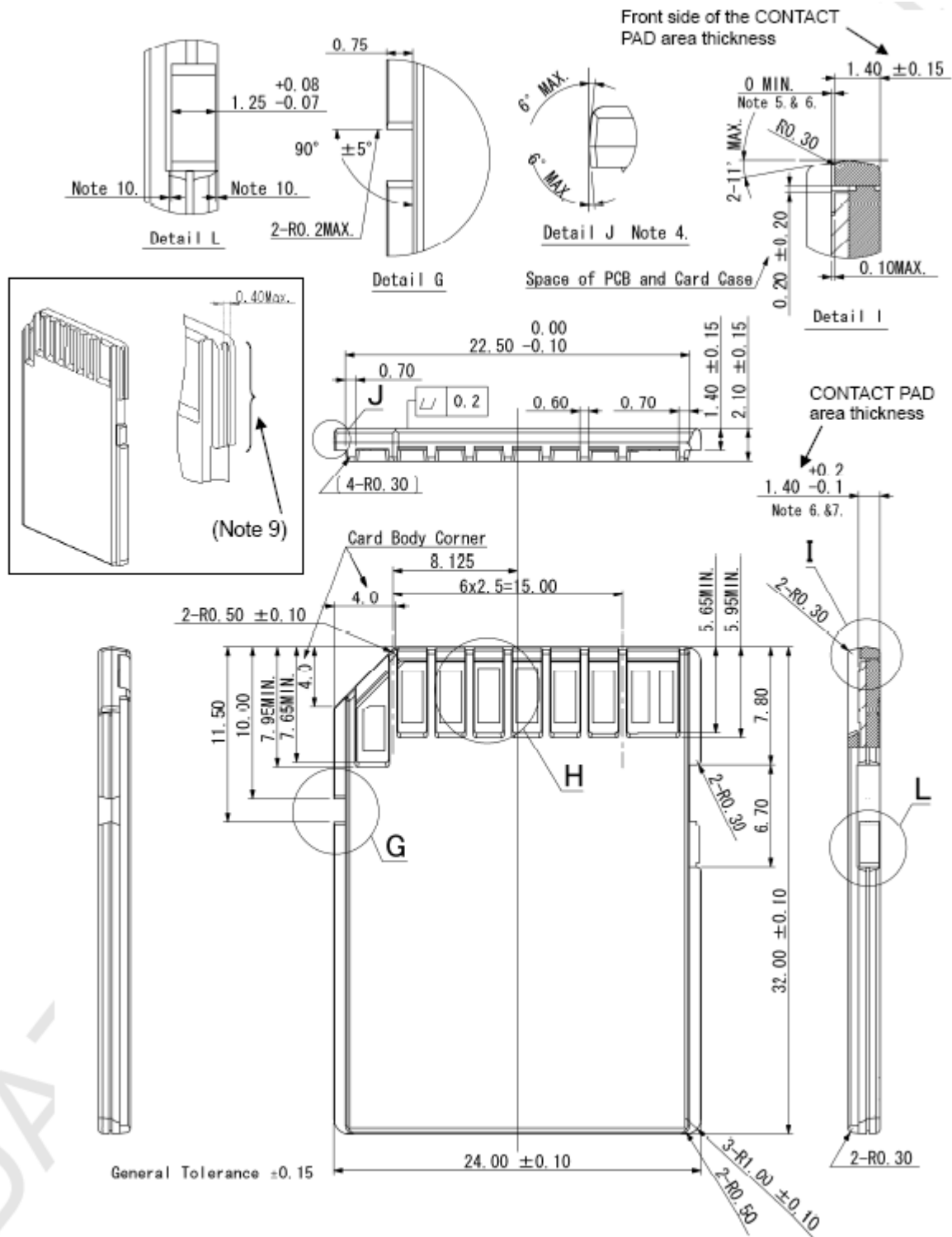
3.0 Mechanical Specification

3.1 Physical dimensions and Weight

Parameter	Description
Weight:	2g
Length:	32±0.10mm
Width:	24±0.10 mm
Thickness: Excluding Lip	2.1±0.15mm

[Figure 3-1] Physical dimension

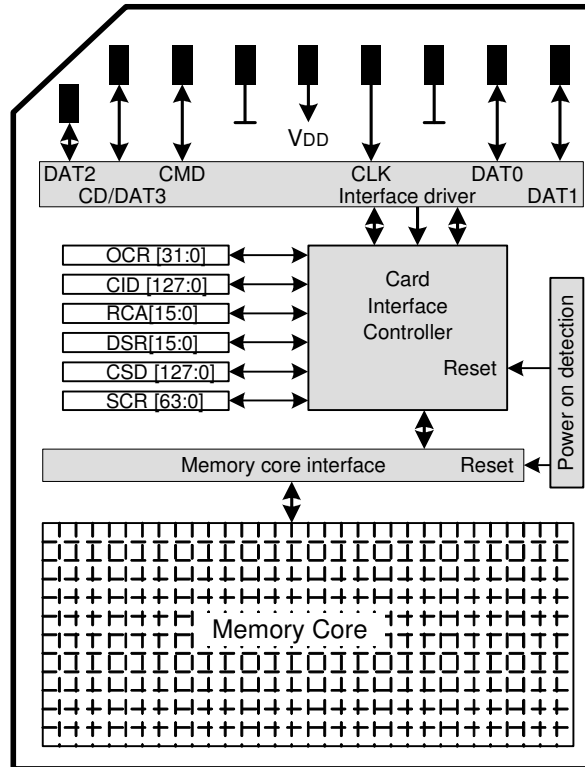




4.0 Electronic Specification

4.1 SD Memory Card Interface Connector

Drive Connector : SD type 9pin

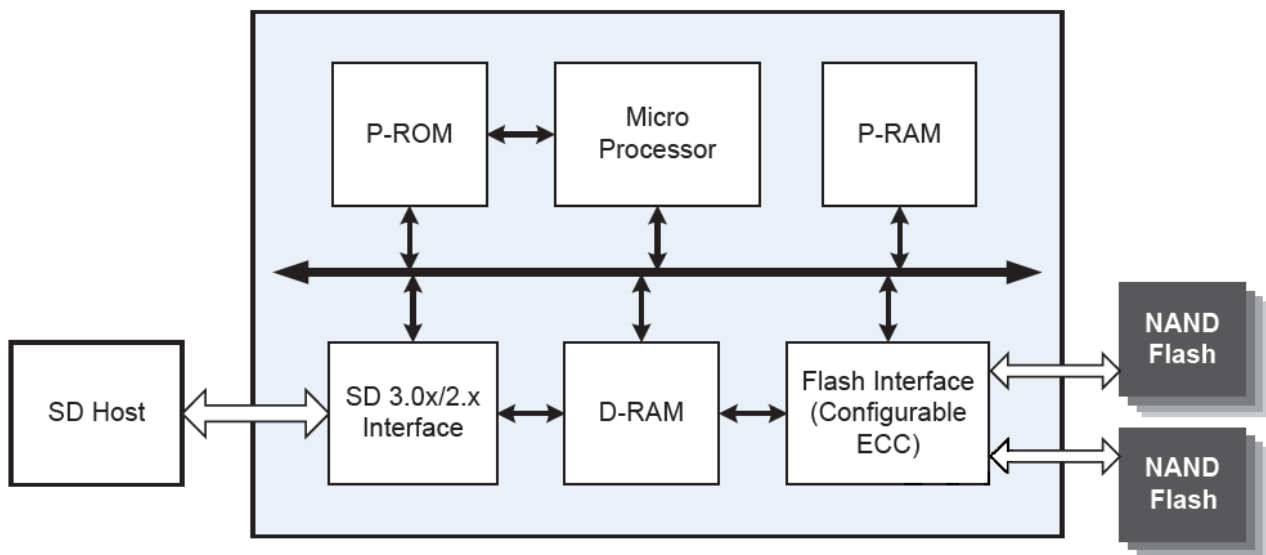


[Figure 4-1] SD Interface Connector

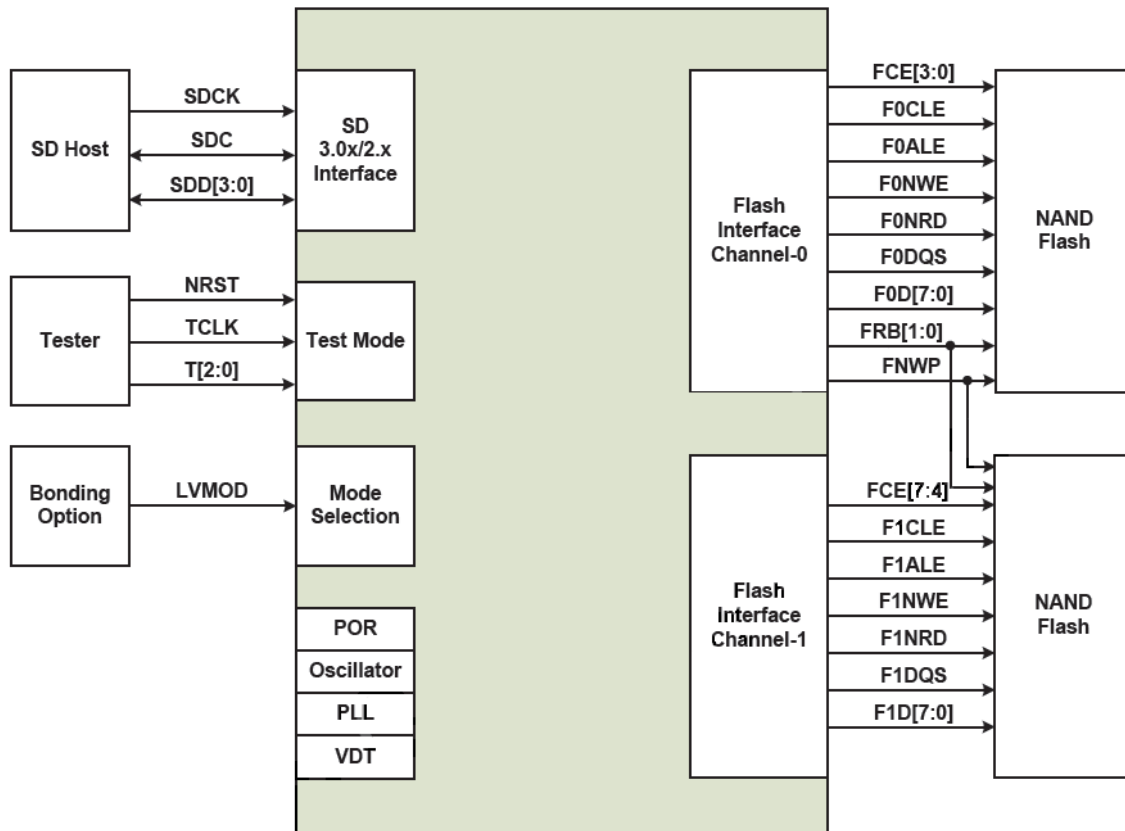
4.2 Pin Assignments and Pin Type

Pin #	SD Mode		
	Name	Type ¹	Description
1	CD/DAT3 ²	I/O/PP ³	Card Detect / Data Line [Bit 3]
2	CMD	PP	Command / Response
3	VSS1	S	Supply voltage ground
4	VDD	S	Supply voltage
5	CLK	I	Clock
6	VSS2	S	Supply voltage ground
7	DAT0	I/O/PP	Data Line [Bit 0]
8	DAT1 ⁴	I/O/PP	Data Line [Bit 1]
9	DAT2 ⁵	I/O/PP	Data Line [Bit 2]

4.3 Function Block Diagram



The following figure is a typical application block diagram for the IDC3B.





5.0 Product Specifications

5.1 System Interface and Configuration

- Motherboard : ASUS P5K3 DELUXE
- CPU : Intel i7-2600 3.40GHZ
- RAM : ADATA 8GB DDRIII 1600MHZ x1
- OS : Window XP SP3 / Windows 7
- Software : CrystalDiskMark V3.0
- interface:USB3.0 Card reader
- Samples : Each Capacity

5.2 System Performance

The ADATA SD Memory Card meets the performance requirements listed in below table.

The performance was measured on a computer system with following setup:

IDC3B	Windows 7	
	Read (Minimum)	Write (Minimum)
4GB	33 MB/s	10 MB/s
8GB	33 MB/s	10 MB/s
16GB	33 MB/s	17 MB/s
32GB	33 MB/s	22 MB/s

Actual performance may vary depending on use conditions and environment

5.3 Drive Capacity

Windows 7	Capacity	Total bytes
4GB	3.75GB	4,029,677,568
8GB	7.51GB	8,068,792,320
16GB	15GB	16,147,021,824
32GB	30GB	32,299,286,528



5.4 Supply Voltage

Item	Requirements
Allowable voltage	3.3V ± 5%
Allowable noise/ripple	100mV p-p or less

5.5 System Power Consumption

Power	Typical
Active	< 0.30 W
Idle/Standby/Sleep	< 0.001 W

5.6 System Reliability

MTBF	1,000,000 hrs
Endurance	3K Program/Erase cycles (Depend on flash IC spec)

5.7 Environmental Specifications

Feature	Operator	Non-Operator
Temperature (For Industrial)	-40°C to 85°C	-40°C to 85°C
Temperature (For Commercial)	0°C to 70°C	-25°C to 85°C
Humidity	0°C to 55°C / 5%~95% RH, non-condensing	
Vibration	20G(10~2000Hz)	
Shock	500G/0.5ms	

*Note: Depends on Flash memory specifications.



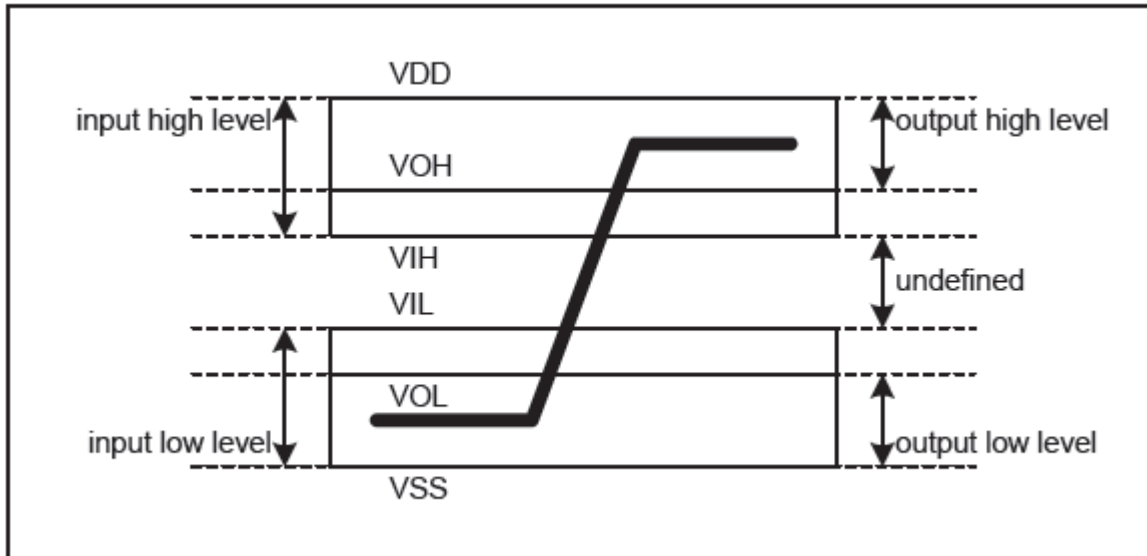
5.8 General DC Characteristics

Parameter	Symbol	Min	Max	Unit	Notes
Supply Voltage	VDD	2.7	3.6	V	
Output High Voltage	VOH	0.75*VDD		V	IOH=-100uA VDD min
Output Low Voltage	VOL		0.125*VDD	V	IOL = 100uA VDD min
Input High Voltage	VIH	0.625*VDD	VDD+0.3	V	
Input Low Voltage	VIL	VSS-0.3	0.25 *VDD	V	
Power Up Time			250	ms	From 0V to VDD min
Operating Current	ICC		200	mA	IVCCF = 0mA (High speed mode)
Stand-by Current	ISB		100	uA	
Input Leakage Current	ILI		±10	uA	VIN = 0 to VDDH

5.9 Bus Signal Line Loading

Parameter	Symbol	Min	Max	Unit	Notes
Pull up resistance for SDC line	R _{CMD}	10	100	K Ohm	To prevent bus floating
Pull up resistance for SDD line	R _{DAT}	10	100	K Ohm	To prevent bus floating
capacitance for each signal Pin	C _L		40	pF	
Pull-up resistance inside card (pin 1)	R _{DAT3}	10	90	K Ohm	May be used for card detection

5.10 Bus Signal Level



DC Characteristics of I/O Interface

Parameter	Symbol	Min	Max	Unit	Notes
Output High voltage	V_{OH}	2.4		V	$V_{DD} = 3.3V$
Input Low voltage	V_{OL}		0.4	V	$V_{DD} = 3.3V$
Input High voltage	V_{IH}	2.0	3.6	V	$V_{DD} = 3.3V$
Output Low voltage	V_{IL}	-0.3	0.8	V	$V_{DD} = 3.3V$



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6.0 Ordering Information

6.1 Model Name

I D C 3 B - XXXX X

OP. Temperature:

- M : MLC, Normal, -0~70℃
- T : MLC, Wide, -40~+85℃

Capacity:

- 004G : 4GB
- 008G : 8GB
- 016G : 16GB
- 032G : 32GB

Project Count Number

Year: 2=2012、3=2013

Form Factor:

- M : Module
- C : Card
- No Define for SSD

Interface:

- D : SD Card

Application:

- I : Industrial



6.2 Packing

1.) Front label

Capacity	4GB	8GB	16GB	32GB
IDC3B(M)				
IDC3B(T)				

2.) Back printing



Printing content: (a) Work Order Number: (Ex: 120529641318000001)

(b) Made In Taiwan

(c) Model name: (Ex: IDC3B-032GM)

Definition for internal and external S/N

EX: 120529641318000001 (Total 18 codes)

Code	1-8	9-10	11-12	13	14-18
Definition	WIP No.	Year	Week	Product Condition	Counting No.
Example	12052964	13	18	0	00001

Explanation:

(a) Code 1-8: ADATA internal WIP No., total 8 numbers.



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- (b) Code 9-10: Produced year, 2013=13, 2014=14.....
 - (c) Code 11-12: Produced week
 - (d) Code 13: Product condition and for RMA used. New finished goods: 0, first time of RMA: 1; Second time of RMA: 2, and such like.....
 - (e) Code 14-18: Serial No. by decimal counting method. Total 5 numbers. And, it will begin from 00001 per each new WIP.

3.) Packing: 50pcs in one tray; 50 tray in one carton, total is 2500pcs/carton.