DATASHEET

Solid State Drive

P3-XXX

Rev:1.0

Formulate: xiexing Check: Bill Approval : AQi

Note:

Company will not give any notice for change of products specifications. This product manual is only for reference. Please contact with KingSpec Electronic Technology Co., Ltd. for more detail technical parameters and information.

JP Distributor: World fujico Co., Ltd
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Table of content

1. Product introduction

1.1 Summary

P3-XXX is a high performance and high reliability storage device which consists nonvolatile NAND Flash memories and semiconductor components. This technology is designed to optimize the limitations of low computing performance of traditional hard disk drives. All mechanical parts have been replaced with electronic components to prevent shock and vibration damages. As to replace the hard disk drive, 2.5 inches SSD keeps the same interface as traditional hard disk drives.

1.2 Product model list

Model	Flash	Capacity	Sequential Read	Sequential Write
P3-120	3D TLC	120GB	470~520MB/S	250~310 MB/S
P3-240	3D TLC	240GB	480~540MB/S	450~510 MB/S
P3-60	3D MLC	60GB	400~450MB/S	180~260MB/S
P3-120	3D MLC	120GB	420~460 MB/S	290~320 MB/S
P3-240	3D MLC	240GB	490~550 MB/S	450~520 MB/S
P3-480	3D MLC	480GB	500~570 MB/S	480~540 MB/S

1.3 Specifications

1.3.1 Interface protocol: SATAIII 6Gbps;

1.3.2 Input voltage: DC 5V (±5%);

1.3.3 Operating temperature: 0℃ ~ +70℃;

1.3.4 Storage temperature: -20℃ ~ +75℃;

1.3.5 Physical dimension: 2.5 inch (100.4mm length * 70.0mm wide * 7.0mm height error±0.5mm);

1.3.6 Write endurance: Write 100GB /Day, theoretically can use 8 years;

1.3.7 Read life: unlimited;

1.3.8 MTBF: 1,000,000 hours;

1.3.9 Support Capacity: 64GB, 128GB, 256GB, 512GB;

1.4 Features

1.4.1 SATA 6Gbp/s interface.

1.4.2 Support wear leveling.

1.4.3 Support Garbage collection.

1.4.4 Support Over-provisioning.

1.4.5 Support power management and intelligent management technology.

1.4.6 Support Native Command Queuing (NCQ) ;

1.4.7 Support TRIM (Disable Delete Notify) command;

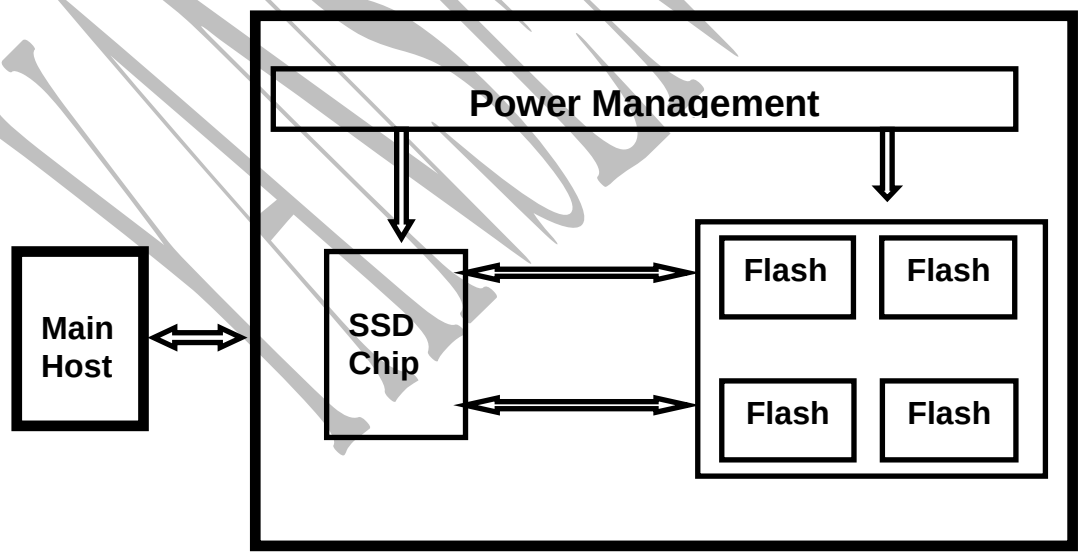
1.4.8 Support Error Checking And Correcting(ECC).

1.4.9 Support PIO mode 0,1,2,3,4;

1.4.10 Support DMA mode 0,1,2;

1.4.11 Support UDMA mode 0,1,2,3,4,5,6,7;

2. Block diagram



3. Measurements

L100.4mm * W70.0mm * H7.0mm, Error±0.5m (e.g. Figure 1)

Using 4 screws to fix SSD;

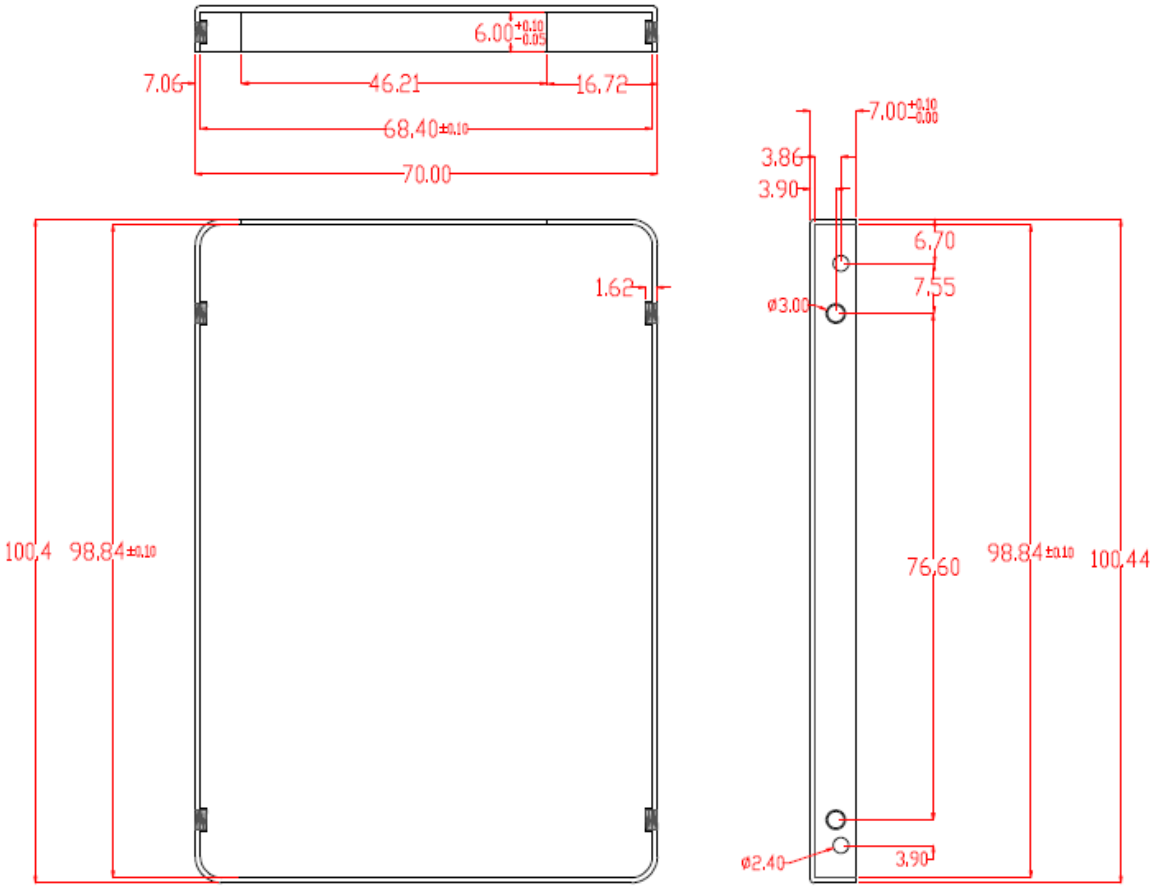


Figure 1

4. Interface description/Pin description

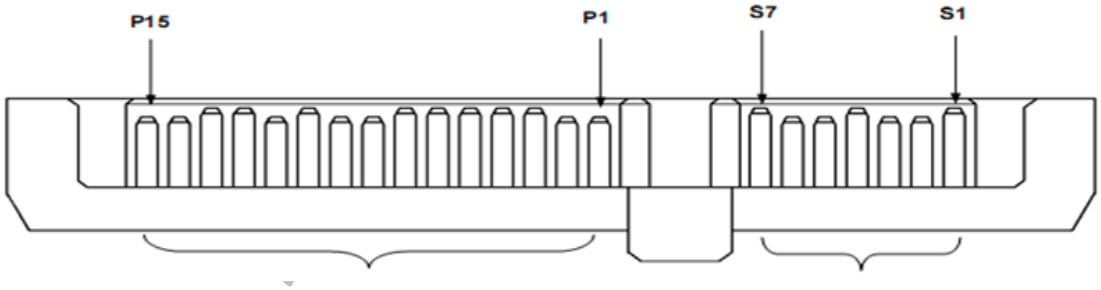


Figure 2

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PIN	PIN Definition	PIN	PIN Definition
S1	GND	P5	GND
S2	A+	P6	GND
S3	A-	P7	5V
S4	GND	P8	5V
S5	B-	P9	5V
S6	B+	P10	GND
S7	GND	P11	DAS/DSS
P1	/	P12	GND
P2	/	P13	/
P3	/	P14	/
P4	GND	P15	/

5. Performance

5.1 Read & Write Speed Test

Model: P3-512

Motherboard: Intel Z68

CPU: Intel® Core(TM) i5-2400 3.10GHz

Memory: Kingston 4GB

OS: WIN7 Professional

BIOS Set: AHCI model

Test Software: CrystalDiskMark5.2

Test Project	Read	Write
Sequential read and write	565MB/S	533MB/S
4K Read & Write	32MB/S	90MB/S

5.2 Data Throughput Test

Model: P3-512

Motherboard: Intel Z68

CPU: Intel® Core(TM) i5-2400 3.10GHz

Memory: Kingston 4GB

OS: WIN7 Professional

BIOS Set: AHCI mode

Test Software: Iometer 2008

Test Project	Test Result	
	512K bytes	4Kbytes
Sequential Read	73900	92900
Sequential Write	3444	83700
Random Read	27100	85500
Random Write	3734	74500

5.3 Access time

Model: P3-512

Motherboard: Intel Z68

CPU: Intel® Core (TM) i5-2400 3.10GHz

Memory: Kingston 4GB

OS: WIN7 Professional

BIOS Set: AHCI mode

Test Software: HD Tune Pro 3.50

Random Access time: 0.12 5ms

6. Power consumption

Input voltage: DC 5V (±5%)

Model test: P3-512

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Test Project		Power Consumption	Unit
Idle		0.49	W
4K	Sequential Read	1.99	W
	Sequential Write	2.24	W
	Random Read	2.43	W
	Random Write	2.46	W
512K	Sequential Read	2.3	W
	Sequential Write	1.39	W
	Random Read	2.24	W
	Random Write	2.19	W

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