Product Catalogue 2013

Industrial Embedded Flash and DRAM Storage Products

innodisk

Our products and technologies are designed with an emphasis on quality and are unique for each application in the cloud computing, industrial/embedded, and aerospace & defense industries.

Innodisk is a service-driven provider of industrial embedded flash and DRAM storage products and technologies, with a focus on the industrial/embedded, cloud computing, and aerospace and defense industries. We have our own factory and firmware team, and a passion for developing breakthrough technologies. With a dedication to Absolute Service and a commitment to quality, customization, and innovation, Innodisk provides its customers with the finest industrial embedded flash and DRAM storage products and technologies.

Absolute Service

Service is not just what we do. It's who we are.

Absolute Service is our pledge and our guide. It infuses everything we do at Innodisk.

Absolute Service is our promise to deliver the most comprehensive service in every situation. It's the philosophy that guides us in all interactions with our customers and business partners. It's the spirit of friendliness and enthusiasm that fills each member of the Innodisk team.

Absolute Service is our absolute commitment to our customers..

iSLC Your New Choice for SSDs
A cost-effective solution comparable to SLC

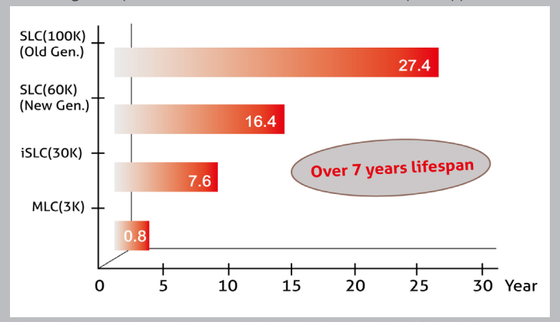
iSLC is our exclusive technology, which is designed to outdo the endurance, performance and reliability onto superior-MLC solutions. Through the use of flash management algorithms, iSLC improves SSD endurance up to 30,000 times, increasing lifespans to at least 10 times longer than consumer-MLC solutions. In addition, iSLC improves the performance of solid state drives, with similar read/write performance of SLC-based solutions, and with data quality that is on par with SLC technologies.

Why do we recommend you to choose our iSLC?

- Performance and data quality congruent to SLC
- Lifespan 10 times longer than MLC
- Half or less cost than SLC

Suitable Lifespan for your application

SSDs with iSLC can sustain 32GB capacity drive writes per day for over 7 years, delivering a lifespan that is suitable for industrial and enterprise applications.



Notes: The iSLC lifespan is base on flash quality & innodisk L² algorithm.

Our Focus

Innodisk focuses on providing reliable memory products and technologies for mission-critical applications. We understand the importance of quality in industrial embedded flash and DRAM storage products. So, we manufacture all of our products in our own purpose-built memory production facility. And to meet the individual needs of each application, our experienced in-house firmware development team delivers fast turnaround and knowledgable support whenever firmware customization is required.

Industrial/Embedded

Our products can be found in a wide range of industrial/embedded applications, from automation, telecommunications, and medical equipment to transportation. We also offer product customization to suit various working conditions and temperatures.

Industrial/Embedded

Cloud Computing

Cloud Computing

Our comprehensive server-grade storage products are designed to support different levels and scales of cloud computing and high-performance computing server applications. Our products can be customized to meet specific needs, such as higher speed, higher density, or lower power consumption.

Aerospace and Defense

When it comes to aerospace and defense applications, we offer some of the most rugged and robust memory products in the market. Our products not only meet the industries' stringent standards but also exceed many critical performance requirements, such as reliability and data security.

Aerospace and Defense

A Commitment to Technical Innovation

Innodisk continues to bring the most innovative products to a range of industries by developing outstanding proprietary technologies. Here are just few examples of Innodisk's breakthroughs and innovations.

Pin 7

Pin 7 is a Serial ATA device-to-host connection technology. It eliminates the need for power cables, making SSDs more shock-resistant and better suited for extreme environments. Pin 7 is the choice for system integrators who require flexibility, reliability, and space-maximization in the design of their systems. Pin 7 technology is used in Innodisk's SATADOM series, which is featured in Intel's Romley server boards and is currently the smallest flash storage device available.

iSMART

iSMART is a powerful, easy-to-use SSD and HDD health monitoring tool. It allows system integrators to track important disk information, such as temperature, storage space, bad blocks, lifespan, and firmware, all under one platform. With iSmart, system integrators can better manage disk usage and know exactly when to replace a disk, before the end of its life cycle.

iCell

iCell is a smart data protection technology that is built into Innodisk's SSDs. iCell is crucial for mission-critical applications, where working under extreme conditions and without backup power is unavoidable. Our iCell technology provides a mechanism to instantaneously discharge data stored in temporary volatile DRAM buffers to flash storage, to ensure the safety of data during power failures.

Thermal Sensor

Innodisk's Thermal Sensor is a robust heat and workload management technology that is built into our DRAM modules and flash storage. It is a crucial solution for industrial and aerospace and defense applications, which are often susceptible to extreme heat and performance stress. Innodisk's Thermal Sensors help to lower the working temperature while distributing workloads, which prevents modules from overworking and overheating, and greatly enhances system performance and system stability.

Power Cycling

Innodisk's Power Cycling management is a comprehensive data protection mechanism that functions before and after a sudden power outage to the SSD. Low-power detection terminates data writing before an abnormal power-off, while table-remapping after power-on deletes corrupt data and maintains data integrity. Innodisk's Power Cycling provides effective power cycling management, preventing data stored in flash from degrading with use.

Garbage Collection/ TRIM

Innodisk's Garbage Collection/TRIM technology is used to maintain data consistency and perform continual data cleansing on SSDs. It runs as a background process, freeing up valuable controller resources while sorting good data into available blocks, and deleting bad blocks. It also significantly reduces write operations to the drive, thereby increasing the SSD's speed and lifespan. With Innodisk Garbage Collection/TRIM technology, an SSD's health and performance are optimized.

New Flash Product Naming Rule

2.5" SATA SSD 3IE

Form factor

SSD
SATADOM
SATA Slim
mSATA
NGFF
miniPCIE
CF-SATA
CFast
CF Card
EDC
SD
microSD
USB
nanoSSD

Generation

3: Generation III
2: Generation II
1: Generation I

Flash Type

S: SLC
We offer a series of products with SLC-based flash, boasting faster write speeds, lower power consumption and higher cell endurance. SLC-based flash is more reliable and suitable of critical applications.

M: MLC
The primary benefit of MLC-based flash is its lower cost per unit of storage due to the higher data density. This benefit makes MLC-based flash a perfect replacement of traditional HDD.

I: iSLC
iSLC is innodisk's exclusive firmware technology, which improves the performance and data quality with similar write performance of SLC-based solutions. Through the use of flash management algorithms, iSLC improves SSD endurance up to 30,000 times.

Application & Series

E: Embedded
G: EverGreen
R: InnoRobust
S: Server

G: EverGreen
EverGreen Series is applied with an evolved L^2 Architecture which significantly improves SSD random data transfer rate and lifespan. These features are suitable for specific applications and are best suited for data file sizes are smaller than or equal to 128KBytes. When using in that way, EverGreen lifespan can be extended over 30 times than general MLC-based SSD.

R: InnoRobust
InnoRobust series meets all of today's aerospace and defense application requirements. InnoRobust storage products are fully compliant with aerospace and defense standards, including MIL-STD-810F/G and MIL-I-46058C InnoRobust products are fully protected against heat, dust, extreme cold and heat, shock, vibration, and other environmental stresses. We also deliver industry-leading data protection technologies to keep sensitive information secure.

L: InnoLite
InnoLite series is all with MLC-based flash, which is budget friendly. For the InnoLite series we combine industrial designs with consumer requirements and value-added design than consumer market. i.e. static wear leveling algorithm, auto ECC function. Also, Innodisk guarantees fixed specifications for customer to go with long term cooperation.

E: Embedded
Embedded series is the best solution for the industrial embedded system. So it features reliable, high performance and long endurance. We offer complete form factors to fulfill customer and business partner's needs , including 2.5" SSD, 1.8" SSD, SATADOM, mSATA, SATA Slim, SATADOM, iCF & CFast, EDC, and SD.

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Innodisk Flash Memory

Innodisk flash memory products are designed to be highly reliable and stable, and provide longer life cycles for the embedded and industrial systems in which they are used. Innodisk offers the industry's widest selection of flash memory form factors, including standard 1.8" and 2.5" Industrial SSDs, SATADOM—the smallest high-speed SATA storage in the industry, CompactFlash Cards, mSATA , SATA Slim, and USB Flash Drives. Our products are available in single-layer cell (SLC) and multi-layer cell (MLC) flash types.

SSD

Innodisk SSDs bring a whole new level of high performance to memory storage. Our wide selection of SSDs are designed for different applications, including industrial/embedded, enterprise server, aviation, defense, and other semi-industrial applications, such as thin clients, POS, and kiosk. Our SSDs come in iSLC, SLC and MLC types, and support PATA/IDE 44 pin, SATA II (3.0Gb/s), and SATA III (6.0Gb/s).

Model name	2.5" SATA SSD 3IE	2.5" SATA SSD 3SE-P	2.5 SATA SSD 3SE	2.5" SATA SSD 3SR-P
Key Features	1.Cost-effetive industrial Flash with iSLC 2.Lifespan 10 times loger than MLC 3.Performance and data quality congruent to SLC	1.Build-in DRAM buffer 2.Intelligent error recovery system 3.Excellent data transfer speed 4.Enhanced power cycling management	1.Intelligent error recovery system 2.Excellent data transfer speed 3.Enhanced power cycling management	1.Compliant with MIL-STD-810-F/G 2.HW/SW Data Security (QEraser/ Destroy/ SEraser/ Write Protect) 3.iCell supported, 100% data protection
Interface	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**
Flash Type	iSLC	SLC	SLC	SLC
Capacity	8GB-128GB	8GB-256GB	8GB-128GB	8GB-256GB
Max. Channel	4	4	4	4
Sequential R/W (MB/sec, max.)	470/300	510/340	510/340	510/340
Max. Power consumption	2.2W (5Vx450mA)	2.2W (5Vx450mA)	2.2W (5Vx450mA)	3.25W (5Vx650mA)
Thermal Sensor	Optional	Optional	Optional	Y
External DRAM Buffer	N	Y	N	Y
iCell	N	Optional	N	Y
TRIM	N	Y	N	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	69.8 X 100.1 X 7.0	69.8 X 100.1 X 9.3	69.8 X 100.1 X 9.3	69.8 X 100.1 X 9.3
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	DHS25-XXXD062C***	DES25-XXXD67SC***	DES25-XXXD06SC***	DRS25-XXXD67SC***
Extended temp. OP(-20°C~+85°C)	N	N	N	N
Wide temp. OP(-40°C~+85°C)	DHS25-XXXD062W***	DES25-XXXD67SW***	DES25-XXXD06SW***	DRS25-XXXD67SW***
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)			

Model name	2.5" SATA SSD 3MR-P	2.5" SATA SSD 3MG-P	2.5" SATA SSD 3ME
Key Features	1.Compliant with MIL-STD-810-F/G 2.HW/SW Data Security (QEraser/ Destroy/ SEraser/ Write Protect) 3.iCell supported, 100% data protection	1.EverGreen L² architecture 2.7mm height mechanical design 3.Excellent random performance	1.7mm height mechanical design 2.Low power consumption 3.Budget friendly MLC-based solution
Interface	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**
Flash Type	MLC	MLC	MLC
Capacity	8GB-256GB	8GB-256GB	8GB-256GB
Max. Channel	4	4	4
Sequential R/W (MB/sec, max.)	460/240	460/240	460/240
Max. Power consumption	3.25W (5Vx650mA)	2.1W (5Vx428mA)	2.1W (5Vx428mA)
Thermal Sensor	Y	Optional	Optional
External DRAM Buffer	Y	Y	N
iCell	Y	Optional	N
TRIM	Y	Y	N
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	69.8 X 100.1 X 9.3	69.8 X 100.1 X 7.0	69.8 X 100.1 X 7.0
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DRS25-XXXD67SC***	DGS25-XXXD67SC***	DES25-XXXD06SC***
Extended temp. OP(-20°C~+85°C)	N	N	N
Wide temp. OP(-40°C~+85°C)	DRS25-XXXD67SW***	DGS25-XXXD67SW***	DES25-XXXD06SW***
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)		



Model name	2.5" SATA SSD 2IE	InnoRobust II 2.5" SATA SSD	InnoRobust II 1.8" SATA SSD
Key Features	1.Cost-effetive industrial Flash with iSLC 2.Lifespan 10 times loger than MLC 3.Performance and data quality congruent to SLC	1.Compliant with MIL-STD-810-F/G 2.Data Security (QEraser/Destroy/SEraser/Write Protect) 3.iCell supported, 100% data protection	1.Compliant with MIL-STD-810-F/G 2.SW Data Security (QEraser/Destroy/SEraser/ Write Protect)
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	iSLC	SLC	SLC
Capacity	8GB-256GB	8GB-256GB	8GB~128GB
Max. Channel	8	8	8
Sequential R/W (MB/sec, max.)	230/230	170/140	170/140
Max. Power consumption	2.1W (5V x428 mA)	3.75W (5V x 750mA)	2.5W(5V x 500mA)
Thermal Sensor	Y	Y	Y
External DRAM Buffer	N	Y	Y
iCell	N	Y	N
TRIM	N	Y	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	69.8 X 100.1 X 9.3	69.8 X 100.1 X 9.3	54.0x78.5x5.0
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DHS25-XXXJ201C***	D2SN-XXXJ21AC*** D2SN-XXXJ21AK***	D1SN-XXXJ21AC*** D1SN-XXXJ21AK***
Extended temp. OP(-20°C~+85°C)	DHS25-XXXJ201E***	N	N
Wide temp. OP(-40°C~+85°C)	N	D2SN-XXXJ21AW*** D2SN-XXXJ21AT***	D1SN-XXXJ21AW*** D1SN-XXXJ21AT***
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)		




Model name	Fid 2.5" SATA 25000	Fid 1.8" SATA 25000	Fid 2.5" SATA 10000 Plus	Fid 1.8" SATA D150 SSD
Key Features	1.iCell supported, 100% data protection 2.High data transfer speed and IOPS	1.Stasnard Micro SATA 7+9 pin 2.High data transfer speed and IOPS	1.Build-in DRAM buffer 2.Intelligent error recovery system 3.High data transfer speed	1.8' housing, 50% space saving
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	SLC	SLC	SLC	SLC
Capacity	8GB-256GB	8GB-128GB	8GB-128GB	2GB~64GB
Max. Channel	8	8	8	4
Sequential R/W (MB/sec, max.)	250/230	240/200	250/230	130/120
Max. Power consumption	3.5W (5V x 700 mA)	2.5W (5V x 500 mA)	2.8W (5V X 560 mA)	1W (5V X200 mA)
Thermal Sensor	Y	Y	Y	Y
External DRAM Buffer	Y	Y	Y	N
iCell	Y	N	N	N
TRIM	Y	Y	N	N
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	69.8 X 100.1 X 9.3	54.0x78.5x5.0	69.8 X 100.1 X 9.3	69.8X 50.0 X 9.3
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	D2SN-XXXJ20AC***	D1SN-XXXJ20AC***	D2ST2-XXXJ20AC***	D1ST2-XXXJ30AC***
Extended temp. OP(-20°C~+85°C)	N	N	N	N
Wide temp. OP(-40°C~+85°C)	D2SN-XXXJ20AW***	D1SN-XXXJ20AW***	D2ST2-XXXJ20AW***	D1ST2-XXXJ30AW***
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56,512GB=C12) ***= flash configuration (internal control code)			



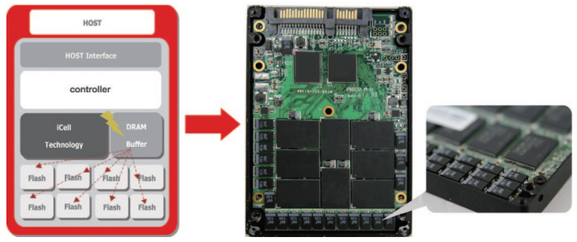
Model name	InnoRobust II 2.5" SATA SSD	InnoRobust II 1.8" SATA SSD	EverGreen Plus 2.5" SATA SSD
Key Features	1.Compliant with MIL-STD-810-F/G 2.Data Security (QEraser/Destroy/SEraser/Write Protect) 3.iCell supported, 100% data protection	1.Compliant with MIL-STD-810-F/G 2.SW Data Security (QEraser/Destroy/SEraser/ Write Protect)	1.EverGreen L² architecture 2.iCell Supported, 100% data protection
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	MLC	MLC	MLC
Capacity	8GB~512GB	8GB~256GB	8GB~512GB
Max. Channel	8	8	8
Sequential R/W (MB/sec, max.)	220/120	220/120	220/150
Max. Power consumption	3.75W(5V x 750mA)	2.5W(5V x 500mA)	3.5W (5V X 700 mA)
Thermal Sensor	Y	Y	Y
External DRAM Buffer	Y	Y	Y
iCell	Y	N	Y
TRIM	Y	Y	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	69.8 X 100.1 X 9.3	54.0x78.5x5.0	69.8 X 100.1 X 9.3
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	D2SN-XXXJ21AC*** D2SN-XXXJ21AK***	D1SN-XXXJ21AC*** D1SN-XXXJ21AK***	D2SL-XXXJ20AC***
Extended temp. OP(-20°C~+85°C)	D2SN-XXXJ21AE*** D2SN-XXXJ21AT***	D1SN-XXXJ21AE*** D1SN-XXXJ21AT***	D2SL-XXXJ20AE***
Wide temp. OP(-40°C~+85°C)	N	N	N
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)		




Model name	EverGreen 2.5" SATA SSD	InnoLite II 2.5" SATA SSD	1.8" SATA SSD 2ME	InnoLite II 1.8" SATA SSD
Key Features	1.EverGreen L² architecture 2.High data transfer speed and High IOPS	Budget friendly MLC-based solution	1.Stasnard Micro SATA 7+9 pin 2.Budget friendly	1.1.8' housing, 50% space saving 2.Budget friendly MLC-based solution
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	MLC	MLC	MLC	MLC
Capacity	8GB~512GB	8GB~512GB	8GB~256GB	8GB~128GB
Max. Channel	8	8	8	4
Sequential R/W (MB/sec, max.)	220/150	240/220	240/140	120/70
Max. Power consumption	3.5W (5V X 700 mA)	3.5W (5V X 700 mA)	2.5W (5V X 500 mA)	2.5W (5V X 500 mA)
Thermal Sensor	Y	Y	Y	Y
External DRAM Buffer	N	N	N	N
iCell	N	N	N	N
TRIM	Y	N	N	N
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	69.8 X 100.1 X 9.3	69.8 X 100.1 X 9.3	54.0x78.5x5.0	69.8X 50.0 X 9.3
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	D2SN-XXXJ20AC***	D2ST2-XXXJ20AC***	DLS18-XXXJ20AC***	D1ST2-XXXJ30AC***
Extended temp. OP(-20°C~+85°C)	D2SN-XXXJ20AE***	D2ST2-XXXJ20AE***	DLS18-XXXJ20AE***	D1ST2-XXXJ30AE***
Wide temp. OP(-40°C~+85°C)	N	N	N	N
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)			

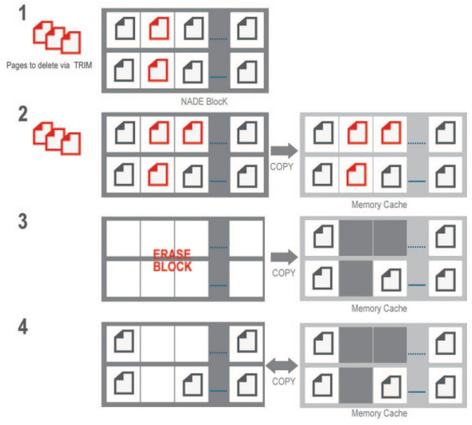
Model name	2.5" SATA SSD 1SR	2.5" SATA SSD 1MR
Key Features	1.Support H/W encryption AES-256 2.Compliant with FIPS-140-2 Level 3 3.Compliant with MIL-STD-810-F/G 4.HW/SW Data Security (QEraser/Destroy/SEraser/Write Protect)	1.Support H/W encryption AES-256 2.Compliant with FIPS-140-2 Level 3 3.Compliant with MIL-STD-810-F/G 4.HW/SW Data Security (QEraser/Destroy/SEraser/Write Protect)
Interface	SATA I 1.5Gb/s	SATA I 1.5Gb/s
Flash Type	SLC	MLC
Capacity	8GB~ 256GB	8GB~ 512GB
Max. Channel	8	8
Sequential R/W (MB/sec, max.)	120/70	120/70
Max. Power consumption	4W(5V x 800mA)	4W(5V x 800mA)
Thermal Sensor	Y	Y
External DRAM Buffer	Y	Y
iCell	Optional	Optional
TRIM	Y	Y
ATA Security	Y	Y
S.M.A.R.T	Y	Y
Dimension (WxLxH/mm)	69.8 X 100.1 X 9.3	69.8 X 100.1 X 9.3
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours	
Standard temp. OP(0°C~+70°C)	DRS25-XXXJ21AC*** DRS25-XXXJ21AK***	DRS25-XXXJ21AC*** DRS25-XXXJ21AK***
Extended temp. OP(-20°C~+85°C)	N	DRS25-XXXJ21AE*** DRS25-XXXJ21AT***
Wide temp. OP(-40°C~+85°C)	DRS25-XXXJ21AW*** DRS25-XXXJ21AT***	N
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56,512GB=C12) ***= flash configuration (internal control code)	

What is icell?



Innodisk R&D team has developed iCell Technology into several SSD drives. iCell Technology ensures reliable and accurate data transfers, even in the event of an abnormal power failure.

What is TRIM?



SSDs are made up of millions of NAND flash cells. They can be written into groups called pages (generally 4KB in size) but can only be erased in larger groups called blocks (generally 128 pages or 512KB). The addresses of the deleted files, or HDD formats are sent along with the TRIM command to the SSD's controller so the drive can function optimally. TRIM commands clean up garbage data on the SSD that can slow performance down. The TRIM command is generally sent from the OS when the system is idle this cleans up the blocks with data that need to be erased so that the drive can perform like new.

SATADOM

Innodisk's Serial ATA Disk on Module (SATADOM) is the world's smallest form factor with exclusive Pin 7 VCC built-in, which simplifies motherboard design. Since it has no external cables, it is more robust and enhances the disk functions of various industrial and enterprise applications. Innodisk's SATADOM also supports the SATA II and SATA III interface with faster data transfer rates and is available in capacities ranging from 1GB up to 128GB.

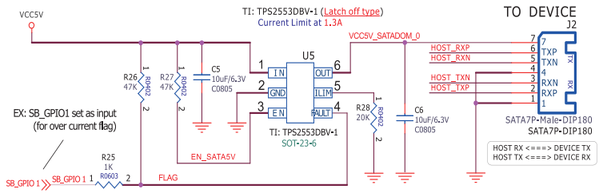
SATADOM advantage

- Smallest high speed SATA storage, supports low profile 1U Rack-mounted
- Up to 128GB, great for SATA storage device
- Reliable industrial grade quality
- No moving parts for better vibration and shock resistance
- Custom Firmware service available
- Qualified by Intel, Supermicro...etc.
- Available in Standard & Industrial temperature

Recommendation for Pin7 VCCissues

Innodisk suggests that customers who want to use products with the Pin7 VCC feature do so as a design-in feature, including a fuse circuit to prevent over-current issues. We recommend our reference circuit to protect the motherboard and device by using either a "POWER SWITCH" or "JUMPER + FUSE"

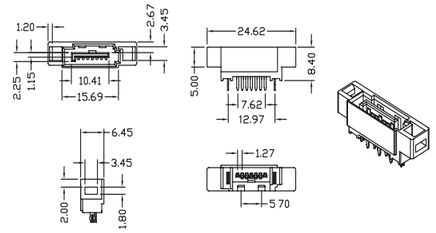
*Warning DO NOT lay out 5V VCC on the SATA socket directly.



Pin7 VCC MB Reference Circuit Design

iSOCKET

1. i-SOCKET can increase the available options for SATA devices because it is backward compatible with other SATA devices.
2. i-SOCKET can be applied in high vibration environments for extra security.



Model name	SATADOM-MV 3IE	SATADOM-SV 3SE	SATADOM-SH 3SE
Key Features	1.Vertical version 2.Cost-effetive industrial Flash with iSLC 3.Lifespan 10 times loger than MLC 4.Performance and data quality congruent to SLC	1.Vertical version 2.Anti-vibration mechanical design	1.Horizontal version 2.Only expose 12mm height on the motherboard when applying in practical
Interface	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**
Flash Type	iSLC	SLC	SLC
Capacity	4GB~64GB	1GB~32GB	1GB~32GB
Max. Channel	4	2	2
Sequential R/W (MB/sec, max.)	470/220	300/130	300/130
Max. Power consumption	1W(5V x 200mA)	0.65W(5V x 130mA)	0.65W(5V x 130mA)
Thermal Sensor	Optional	Optional	Optional
External DRAM Buffer	N	N	N
TRIM	N	N	N
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	25.3 x 41.5 x 6.8	20.9 x 39.5 x 7.9	18.1 x 30.5 x 12
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DHSMV-XXXD062C***(F) DHSMV-XXXD072C***(F)	DESSV-XXXD07SC***(F)	DESSH-XXXD07SC***(F)
Extended temp. OP(-20°C~+85°C)	N	N	N
Wide temp. OP(-40°C~+85°C)	DHSMV-XXXD062W***(F) DHSMV-XXXD072W***(F)	DESSV-XXXD07SW***(F)	DESSH-XXXD07SW***(F)
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code), (F) = Pin 7 Power supported		




Model name	SATADOM-MV 3ME	SATADOM-SV 3ME	SATADOM-SH 3ME	SATADOM-QV 2IE
Key Features	1.Vertical version. 2.Write protection security 3.Anti-vibration mechanical design	1.Vertical version 2.Anti-vibration mechanical design	1. Horizontal version 2.Only expose 12mm height on the motherboard when applying in practical	1.Vertical version 2.Cost-effetive industrial Flash with iSLC 3.Lifespan 10 times loger than MLC 4.Performance and data quality congruent to SLC
Interface	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**	SATA II 3.0Gb/s
Flash Type	MLC	MLC	MLC	iSLC
Capacity	8GB-128GB	4GB-32GB	4GB~64GB	4GB~64GB
Max. Channel	4	1	2	4
Sequential R/W (MB/sec, max.)	460/160	100/40	240/70	130/120
Max. Power consumption	1W(5V x 200mA)	0.65W(5V x 125mA)	1W(5V x 200mA)	1W(5V x 200mA)
Thermal Sensor	Optional	Optional	Optional	Optional
External DRAM Buffer	N	N	N	N
TRIM	N	N	N	N
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	25.3 x 41.5 x 6.8	20.9 x 39.5 x 8.1	22.7 x 32.5 x 12	25.3 x 39.5 x 6.8
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	DESMV-XXXD07SC***(F) DESMV-XXXD06SC***(F)	DESSV-XXXD07SC***(F)	DESSH-XXXD07SC***(F)	DHSMV-XXXJ301C***(F)
Extended temp. OP(-20°C~+85°C)	N	N	N	DHSMV-XXXJ301E***(F)
Wide temp. OP(-40°C~+85°C)	DESMV-XXXD07SW***(F) DESMV-XXXD06SW***(F)	DESSV-XXXD07SW***(F)	DESSH-XXXD07SW***(F)	N
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code), (F) = Pin 7 Power supported			




Model name	SATADOM-QVL 2IE	SATADOM-QH 2IE	SATADOM D150QV	SATADOM D150QV-L
Key Features	1.Vertical and very low profile version 2.Cost-effetive industrial Flash with iSLC 3.Lifespan 10 times loger than MLC 4.Performance and data quality congruent to SLC	1.Horizontal version 2.Cost-effetive industrial Flash with iSLC 3. Lifespan 10 times loger than MLC 4.Performance and data quality congruent to SLC	1.Vertical version 2.High quality SLC-based solution	1.Very Low profile version 2.High quality SLC-based solution
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	iSLC	iSLC	SLC	SLC
Capacity	4GB~64GB	4GB~64GB	2GB~64GB	2GB~64GB
Max. Channel	4	4	4	4
Sequential R/W (MB/sec, max.)	130/120	130/120	130/120	130/120
Max. Power consumption	1W(5V x 200mA)	1W(5V x 200mA)	1W(5V x 200mA)	1W(5V x 200mA)
Thermal Sensor	Optional	Optional	Optional	Optional
External DRAM Buffer	N	N	N	N
TRIM	N	N	N	N
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	35.5 x 30 x 9.5	34.5 x 26x 9.8	25.3 x 39.5 x 6.8	35.5 x 30.0 x 9.5
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	DHSML-XXXJ301C***F	DHSMH-XXXJ301C***F	DESI(H)-XXXJ30AC***(F)	DESIL-XXXJ30AC***F
Extended temp. OP(-20°C~+85°C)	DHSML-XXXJ301E***F	DHSMH-XXXJ301E***F	N	N
Wide temp. OP(-40°C~+85°C)	N	N	DESI(H)-XXXJ30AW***(F)	DESIL-XXXJ30AW***F
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code), (F) = Pin 7 Power supported			




Model name	SATADOM D150QH	SATADOM D150SV	SATADOM D150SH	SATADOM D150SV-L
Key Features	1.Horizontal version 2.Only expose 12mm height on the motherboard when applying in practical 3.High quality SLC-based solution	1.Vertical version 2.Lower power consumption	1.Horizontal version 2.Only expose 12mm height on the motherboard when applying in practical 3.Lower power consumption	1.Very low profile version 2.Lower power consumption
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	SLC	SLC	SLC	SLC
Capacity	2GB~64GB	1GB~16GB	1GB~16GB	1GB~16GB
Max. Channel	4	1	1	1
Sequential R/W (MB/sec, max.)	130/120	35/31	35/31	35/31
Max. Power consumption	1W(5V x 200mA)	0.85W(5V x 170mA)	0.85W(5V x 170mA)	0.85W(5V x 170mA)
Thermal Sensor	Optional	Optional	Optional	Optional
External DRAM Buffer	N	N	N	N
TRIM	N	N	N	N
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	40.0 x 30.0 x 12.3	20.9 x 39.5 x 7.9	8.2 x 30.4 x 12.3	32.9 x 29.5 x 8.0
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	DESIB-XXXJ30AC***F	DES9-XXXJ30AC***(F)	DES9B-XXXJ30AC***(F)	DES8-XXXJ30AC***(F)
Extended temp. OP(-20°C~+85°C)	N	N	N	N
Wide temp. OP(-40°C~+85°C)	DESIB-XXXJ30AW***F	DES9-XXXJ30AW***(F)	DES9B-XXXJ30AW***(F)	DES8-XXXJ30AW***(F)
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code), (F) = Pin 7 Power supported			




Model name	SATADOM D150SH-L	InnoLite SATADOM D150QV	InnoLite SATADOM D150QV-L	InnoLite SATADOM D150QH
Key Features	1.Horizontal version 2.Only expose 12mm height on the motherboard when applying in practical 3.Lower power consumption	1.Vertical version 2.Budget friendly MLC-based solution	1.Very low profile version 2.Budget friendly MLC-based solution	1.Horizontal version 2.Only expose 12mm height on the motherboard when applying in practical 3.Budget friendly MLC-based solution
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	SLC	MLC	MLC	MLC
Capacity	1GB~16GB	8GB~128GB	8GB~128GB	8GB~128GB
Max. Channel	1	4	4	4
Sequential R/W (MB/sec, max.)	35/31	120/70	120/70	120/70
Max. Power consumption	0.85W(5V x 170mA)	1.85W(5V x 370mA)	1.85W(5V x 370mA)	1.85W(5V x 370mA)
Thermal Sensor	Optional	Optional	Optional	Optional
External DRAM Buffer	N	N	N	N
TRIM	N	N	N	N
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	30.3 x 20.4 x 10.2	25.3 x 39.5 x 6.8	35.5 x 30.0 x 9.5	40.0 x 30.0 x 12.3
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	DES8(B/D)-XXXJ30AC***(F)	DESI(H)-XXXJ30AC***(F)	DESIL-XXXJ30AC***F	DESIB-XXXJ30AC***F
Extended temp. OP(-20°C~+85°C)	N	DESI(H)-XXXJ30AE***(F)	DESIL-XXXJ30AE***F	DESIB-XXXJ30AE***F
Wide temp. OP(-40°C~+85°C)	DES8(B/D)-XXXJ30AW***(F)	N	N	N
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code), (F) = Pin 7 Power supported			

SATA Slim

The Innodisk SATA Slim is compliant with the JEDEC SFF-8156 standard form factor and ATA protocol. It does not require drivers, and can be configured as a boot device or a data storage device. It is also suitable for portable/hand-held devices, thin clients, and industrial applications that require the effective reduction of operation system boot time and power consumption. With a 7+15 pin SATA interface, the Innodisk SATA Slim supports most platforms with a standard SATA port.




Model name	SATA Slim 3MG-P	SATA Slim 2IE	SATA Slim 2SR	SATA Slim J200
Key Features	1.EverGreen L² architecture 2.Excellent data transfer speed	1.Cost-effetive industrial Flash with iSLC 2.Lifespan 10 times loger than MLC 3.Performance and data quality congruent to SLC	1.Compliant with MIL-STD-810-F/G 2.SW Data Security (QEraser/ Destroy/SEraser/Write Protect)	1.High quality SLC-based solution 2.Build-in DRAM buffer
Interface	**SATA III 6.0Gb/s**	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	MLC	iSLC	SLC	SLC
Capacity	8GB~256GB	8GB~64GB	8GB~128GB	8GB~128GB
Max. Channel	4	4	8	8
Sequential R/W (MB/sec, max.)	460/160	130/120	185/145	220/180
Max. Power consumption	2.1W (5V x 428 mA)	1W (5V x 200mA)	2.1W (5V x 420mA)	1.75W (5V x 350mA)
Thermal Sensor	Optional	N	Y	Optional
External DRAM Buffer	Y	N	Y	Y
iCell	N	N	N	N
TRIM	Y	N	Y	Y
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	54.0 X 39.8 X 4.0	54.0x 39.8 x 4.0	54.0x 39.0x 6.5	54.0x 39.8 x 6.5
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	DGSLM-XXXD67SC***	DHSLM-XXXJ301C***	DRSLM-XXXJ21AC*** DRSLM-XXXJ21AK***	D1SS-XXXJ20AC***
Extended temp. OP(-20°C~+85°C)	N	DHSLM-XXXJ301E***	N	N
Wide temp. OP(-40°C~+85°C)	DGSLM-XXXD67SW***	N	DRSLM-XXXJ21AW*** DRSLM-XXXJ21AT***	D1SS-XXXJ20AW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)			




Model name	SATA Slim D150Q	SATA Slim 2MR	EverGreen SATA Slim	InnoLite SATA Slim D150Q
Key Features	1.Half Slim, space saving 2.High quality SLC-based solution	1.Compliant with MIL-STD-810-F/G 2.SW Data Security (QEraser/ Destroy/SEraser/Write Protect)	1.EverGreen L² architecture 2.Higher data transfer speed than normal MLC	1.Half Slim,space saving 2.Budget friendly MLC-based solution
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	SLC	MLC	MLC	MLC
Capacity	2GB~128GB	8GB~256GB	8GB~128GB	8GB~128GB
Max. Channel	4	8	8	4
Sequential R/W (MB/sec, max.)	130/120	190/120	220/150	120/70
Max. Power consumption	1W(5V x 200mA)	1.9W (5V x 380mA)	2.0W (5V x400mA)	1.15W (5V x 230mA)
Thermal Sensor	N	Y	Option	N
External DRAM Buffer	N	Y	Y	N
iCell	N	N	N	N
TRIM	N	Y	Y	N
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	54.0x 39.8 x 4.0	54.0x 39.0x 6.5	54.0x 39.8 x 6.5	54.0x 39.8 x 4.0
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	D1SS-XXXJ30AC***	DRSLM-XXXJ21AC*** DRSLM-XXXJ21AK***	D1SS-XXXJ20AC***	D1SS-XXXJ30AC***
Extended temp. OP(-20°C~+85°C)	N	DRSLM-XXXJ21AE*** DRSLM-XXXJ21AT***	D1SS-XXXJ20AE***	D1SS-XXXJ30AE***
Wide temp. OP(-40°C~+85°C)	D1SS-XXXJ30AW***	N	N	N
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)			

mSATA

mSATA, which is distinct from the micro connector, was announced by the Serial ATA International Organization on September 21, 2009. Applications include netbooks, portable devices and other devices that require a smaller solid-state drive. The connector is similar in appearance to a PCI Express Mini Card interface and is electrically compatible; however, the data signals need connection to the SATA host controller instead of the PCI-express host controller. Innodisk's mSATA supports high-performance data transfer rates of 1.5 Gb/s, 3.0 Gb/s and 6.0 Gb/s.



Model name	mSATA 3IE	mSATA 3SE-P	mSATA 3SE
Key Features	1.Cost-effetive industrial Flash with iSLC 2.Lifespan 10 times loger than MLC 3.Performance and data quality congruent to SLC 4.Excellent data transfer speed	1.Excellent data transfer speed and IOPS 2.Support TRIM command 3.Build-in DRAM buffer	1.Excellent data transfer speed 2.High quality SLC-based solution
Interface	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**
Flash Type	iSLC	SLC	SLC
Capacity	4GB~64GB	2GB~32GB	2GB~32GB
Max. Channel	4	4	4
Sequential R/W (MB/sec, max.)	470/ TBD	470/250	470/250
Max. Power consumption	1.2 W (3.3V x 360 mA)	1.2 W (3.3V x 360 mA)	1.2 W (3.3V x 360 mA)
Thermal Sensor	Optional	Optional	Optional
External DRAM Buffer	N	Y	N
iCell	N	N	N
TRIM	N	Y	N
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	29.8 x 50.8 x 4.4	29.8 x 50.8 x 4.4	29.8 x 50.8 x 4.4
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DHMSR-XXXD062C***	DEMSR-XXXD67SC***	DEMSR-XXXD06SC***
Extended temp. OP(-20°C~+85°C)	N	N	N
Wide temp. OP(-40°C~+85°C)	DHMSR-XXXD062W***	DEMSR-XXXD67SW***	DEMSR-XXXD06SW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code)		



Model name	mSATA 3ME	mSATA mini 3ME	mSATA 3MG-P
Key Features	1.Excellent data transfer speed 2.Budget friendly MLC-based solution	1.Write protection security 2.Half mSATA,50% space saving 3.Low power consumption	1.EverGreen L² architecture 2.Intelligent error recovery system 3.Build-in DRAM buffer
Interface	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**
Flash Type	MLC	MLC	MLC
Capacity	8GB~128GB	4GB~64GB	8GB~128GB
Max. Channel	4	2	4
Sequential R/W (MB/sec, max.)	460/240	300/75	460/240
Max. Power consumption	1.6 W (3.3V x 480 mA)	0.8W (3.3V x 240mA)	1.6 W (3.3V x 480 mA)
Thermal Sensor	Optional	Optional	Optional
External DRAM Buffer	N	N	Y
iCell	N	N	N
TRIM	N	N	Y
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	29.8 x 50.8 x 4.4	29.8 x 26.8 x 4.4	29.8 x 50.8 x 4.4
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DEMSR-XXXD07SC*** DEMSR-XXXD06SC***	DEMSM-XXXD07SC***	DGMSR-XXXD67SC***
Extended temp. OP(-20°C~+85°C)	N	N	N
Wide temp. OP(-40°C~+85°C)	DEMSR-XXXD07SW*** DEMSR-XXXD06SW***	DEMSM-XXXD07SW***	DGMSR-XXXD67SW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code)		



Model name	mSATA 2IE	mSATA 2SR	mSATA D150Q
Key Features	1.Cost-effetive industrial Flash with iSLC 2.Lifespan 10 times loger than MLC 3.Performance and data quality congruent to SLC	1.Compliant with MIL-STD-810-F/G 2.SW Data Security (QEraser/Destroy/ SEraser/Write Protect)	1.High quality SLC-based solution 2.Hardware write protecter
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	iSLC	SLC	SLC
Capacity	4GB~64GB	2GB~64GB	2GB~64GB
Max. Channel	4	4	4
Sequential R/W (MB/sec, max.)	130/120	110/90	130/120
Max. Power consumption	1.25W (3.3V x 380mA)	1.72W (3.3V x 520mA)	1.25W (3.3V x 380mA)
Thermal Sensor	Y	Y	Y
External DRAM Buffer	N	N	N
iCell	N	N	N
TRIM	N	Y	N
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	29.8 x 50.8 x 3.5	29.8 x 50.8 x 4.1	29.8 x 50.8 x 3.5
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DHMSR-XXXJ301C***	DRMSR-XXXJ21AC*** DRMSR-XXXJ21AK***	DRPS-XXXJ30AC***
Extended temp. OP(-20°C~+85°C)	DHMSR-XXXJ301E***	N	N
Wide temp. OP(-40°C~+85°C)	N	DRMSR-XXXJ21AW*** DRMSR-XXXJ21AT***	DRPS-XXXJ30AW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code)		


Model name	mSATA 2MR	EverGreen mSATA
Key Features	1.Compliant with MIL-STD-810-F/G 2.SW Data Security (QEraser/Destroy/SEraser/Write Protect)	1.EverGreen L² architecture 2.Intelligent error recovery system 3.Build-in DRAM buffer
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Flash Type	MLC	MLC
Capacity	8GB~ 128GB	8GB~128GB
Max. Channel	4	4
Sequential R/W (MB/sec, max.)	130/65	120/70
Max. Power consumption	1.82W (3.3V x 550mA)	1.25W (3.3V x 380mA)
Thermal Sensor	Y	Y
External DRAM Buffer	Y	N
iCell	N	N
TRIM	Y	N
ATA Security	Y	Y
S.M.A.R.T	Y	Y
Dimension (WxLxH/mm)	29.8 x 50.8 x 4.1	29.8 x 50.8 x 3.5
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours	
Standard temp. OP(0°C~+70°C)	DRMSR-XXXJ21AC*** DRMSR-XXXJ21AK***	DRPS-XXXJ20BC***
Extended temp. OP(-20°C~+85°C)	DRMSR-XXXJ21AE*** DRMSR-XXXJ21AT***	DRPS-XXXJ20BE***
Wide temp. OP(-40°C~+85°C)	N	N
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G) ***= flash configuration (internal control code)	

mini PCIeDOM

The Innodisk Mini PCIeDOM is a Flash based disk module with standard Mini PCIe form factor, and PCI Express Gen.1 interface. It is suitable for board maker or SI to design in the product as a boot drive or a storage device. Meanwhile, it supports multiple operation systems and no driver needed, including Windows XP, Windows 7, and Linux based OS.

Model name	mini PCIeDOM 1ME
Key Features	1.PCI Express interface 2.Driver-less 3.Supports multiple OS
Interface	PCI Express Gen.1 x1 (mini PCIe)
Flash Type	MLC
Capacity	8GB~64GB
Max. Channel	2
Sequential R/W (MB/sec, max.)	170/120
Max. Power consumption	1.2 W (3.3V x 370 mA)
Thermal Sensor	Optional
External DRAM Buffer	N
iCell	N
TRIM	N
ATA Security	Y
S.M.A.R.T	Y
Dimension (WxLxH/mm)	29.8 x 50.8 x 4.4
Environment	"Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours"
Standard temp. OP (0°C~+70°C)	DEEDM-XXXD07SC***
Extended temp. OP (-20°C~+85°C)	N
Wide temp. OP (-40°C~+85°C)	DEEDM-XXXD07SW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)

M.2-SATA(NGFF)

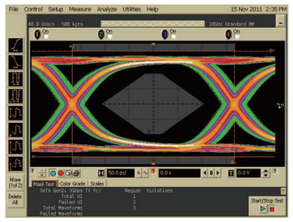
M.2-SATA (NGFF) stands for Next Generation Form Factor, which is comprised of several interfaces and the corresponding system interconnect based on 67pin edge card connectors. The Innodisk M.2-SATA (NGFF) offers wide range capacities in several standard form factors to fulfill different applications, including type 2242, type 2280, and 22110.

Model name	M.2-SATA 3ME
Key Features	Compliant with M2 (NGFF) Type 2242
Interface	SATA III 6.0Gb/s
Flash Type	MLC
Capacity	8GB~64GB
Max. Channel	2
Sequential R/W (MB/sec, max.)	300/75
Max. Power consumption	1W (300mA x3.3)
Thermal Sensor	Optional
External DRAM Buffer	N
iCell	N
TRIM	N
ATA Security	Y
S.M.A.R.T	Y
Dimension (WxLxH/mm)	22.0x42.0x3.4
Environment	"Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours"
Standard temp. OP (0°C~+70°C)	DEM24-XXXD07SC***
Extended temp. OP (-20°C~+85°C)	N
Wide temp. OP (-40°C~+85°C)	DEM24-XXXD07SW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)

CF-SATA

The Innodisk CF-SATA has excellent data transfer speed and the same mechanical design as the CompactFlash card. It becomes compliant with the Serial ATA by extracting the unused pin from the CF50 pins and replacing it with the SATA interface. The CF-SATA is an iSLC flash type and has a thermal sensor built-in.

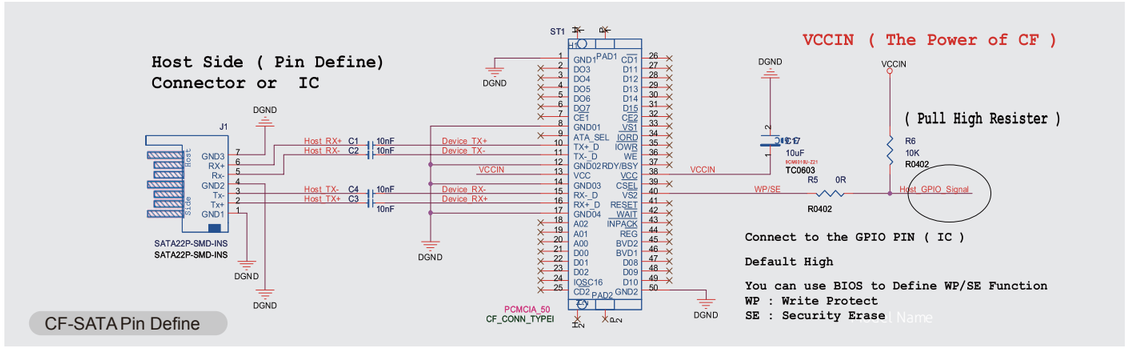
- Replace solution of CF
- 50pins SATA interface
- Support industrial grade up to 64GB
- High-reliability: anti-shock and vibration
- Excellent data transfer speed
- Support Thermal Sensor
- Optional write protect and secure erase function



SATA Eye Pattern

SATA Signal		
Pin	Pure IDE Mode	CF-SATA
1	DGND	DGND
8	DGND	AGND
10	DGND	(From Host to SATA) RX+
11	DGND	From Host to SATA
12	DGND	AGND
13	VCC5	VCC5
14	DGND	AGND
15	DGND	(From Host to SATA) TX-
16	DGND	(From Host to SATA) TX+
17	DGND	AGND
38	VCC5	VCC5
40	VS2 (No connector)	WP(Write Protect) or SE(Security)

CF-SATA INTERFACE



CF-SATA Pin Define

Model name	CF-SATA 3IE
Key Features	1.Replace solution of CF 50 pins with SATA interface 2.Cost effective industrial flash with iSLC
Interface	**SATA III 6.0Gb/s**
Connector	50pin CF connector
Flash Type	iSLC
Capacity	8GB~64GB
Max. Channel	2
Sequential R/W (MB/sec, max.)	200/60
Max. Power consumption	1 W (5V x 200mA)
Thermal Sensor	optional
External DRAM Buffer	N
iCell	N
TRIM	N
ATA Security	Y
S.M.A.R.T	Y
Dimension (WxLxH/mm)	42.8 x 36.4 x3.3
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours
Standard temp. OP(0°C~+70°C)	DC1M-XXXD072C***
Extended temp. OP(-20°C~+85°C)	N
Wide temp. OP(-40°C~+85°C)	DC1M-XXXD072W***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28) ***= flash configuration (internal control code)

CFast

The Innodisk CFast is a small form factor card standard with high data storage capacity. It is suitable for semi-industrial applications. Compliant with the CFast 2.0 standard, it is designed with a 7+17 pin connector and is SATA compatible. The Innodisk CFast offers data transfer rates of sequential read up to 470 MB/sec. and of sequential write up to 250MB/sec.

Moedel name	CFast 3IE	CFast 3SE	CFast 3ME
Key Features	1.Cost-effetive industrial Flash with iSLC 2.Lifespan 10 times loger than MLC 3.Performance and data quality congruent to SLC	1.Compliant with CFast 2.0 standard 2.Excellent data transfer speed	1.Compliant with CFast 2.0 satndard 2.Buget friendly MLC-based solution
Interface	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**	**SATA III 6.0Gb/s**
Connector	7pin+17pin	7pin+17pin	MLC
Flash Type	iSLC	SLC	MLC
Capacity	4GB~64GB	2GB~64GB	8GB~128GB
Max. Channel	2	4	2
Sequential R/W (MB/sec, max.)	310/240	470/250	290/130
Max. Power consumption	1.1W (3.3V x 320mA)	1.1W (3.3V x 320mA)	1.1W (3.3V x 320mA)
Thermal Sensor	Optional	Optional	Optional
External DRAM Buffer	N	N	N
iCell	N	N	N
TRIM	N	N	N
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	42.8 x 36.4 x3.6	42.8 x 36.4 x3.6	42.8 x 36.4 x3.6
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DECFA-XXXD072C***	DECFA-XXXD06SC***	DECFA-XXXD07SC***
Extended temp. OP(-20°C~+85°C)	N	N	N
Wide temp. OP(-40°C~+85°C)	DECFA-XXXD072W***	DECFA-XXXD06SW***	DECFA-XXXD07SW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28) ***= flash configuration (internal control code)		

Moedel name	CFast 2IE	CFast D150Q	InnoLite CFast D150Q
Key Features	1.Cost-effetive industrial Flash with iSLC 2.Lifespan 10 times loger than MLC 3.Performance and data quality congruent to SLC	1.Compliant with CFast 1.0 standard 2.High quality SLC-based solution	1.Compliant with CFast 1.0 standard 2.Buget friendly MLC-based solution
Interface	SATA II 3.0Gb/s	SATA II 3.0Gb/s	SATA II 3.0Gb/s
Connector	7pin+17pin	7pin+17pin	7pin+17pin
Flash Type	iSLC	SLC	MLC
Capacity	4GB~64GB	2GB~32GB	8GB~128GB
Max. Channel	4	4	4
Sequential R/W (MB/sec, max.)	130/120	130/120	120/75
Max. Power consumption	0.76W (3.3V x 230mA)	0.76W (3.3V x 230mA)	0.76W (3.3V x 230mA)
Thermal Sensor	Y	Y	Y
External DRAM Buffer	N	N	N
iCell	N	N	N
TRIM	N	N	N
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	42.8 x 36.4 x3.6	42.8 x 36.4 x3.6	42.8 x 36.4 x3.6
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DC1T-XXXJ301C***	DC1T-XXXJ30AC***	DC1T-XXXJ30AC***
Extended temp. OP(-20°C~+85°C)	DC1T-XXXJ301E***	N	DC1T-XXXJ30AE***
Wide temp. OP(-40°C~+85°C)	N	DC1T-XXXJ30AW***	N
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28) ***= flash configuration (internal control code)		

Real specification is based on officially launched datasheet.

CF Card

Innodisk's Industrial CompactFlash Memory Card (iCF) complies with the PCMCIA* ATA standard. Designed to replace traditional rotating disk drives, Innodisk iCFs are embedded solid-state data storage systems that are designed for mobile computing and the industrial work place.

Model name	iCF 1IE	iCF 9000	iCF 4000	InnoLite iCF
Key Features	1.Cost-effetive industrial Flash with iSLC 2.Lifespan 10 times loger than MLC 3.Performance and data quality congruent to SLC	1. High sustained data transfer speed 2. Enhanced power cycling management	High quality SLC-based solution	Budget friendly MLC-based solution
Interface	PATA	PATA	PATA	PATA
Connector	50pin CF connector	50pin CF connector	50pin CF connector	50pin CF connector
Flash Type	iSLC	SLC/MLC	SLC	MLC
Capacity	2GB~32GB	SLC: 1GB~64GB/MLC: 4GB~128GB	1GB~8GB	4GB~128GB
Max. Channel	2	4	2	2
Sequential R/W (MB/sec, max.)	40/18	100/95(SLC)/100/65(MLC)	40/25	40/15
Max. Power consumption	0.75W(5V x 150mA) 0.5W(3.3V x 150mA)	1.05W(5V x 210mA) 0.69W(3.3V x 210mA)	0.75W(5V x 150mA) 0.5W(3.3V x 150mA)	0.75W(5V x 150mA) 0.5W(3.3V x 150mA)
Thermal Sensor	N	N	N	N
ATA Security	Y	Y	Y	Y
S.M.A.R.T	Y	Y	Y	Y
Dimension (WxLxH/mm)	42.8 x 36.4 x 3.3	42.8 x 36.4 x 3.3	42.8 x 36.4 x 3.3	42.8 x 36.4 x 3.3
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	DC1M-XXXD511C***	DC1M-XXXD71AC***	DC1M-XXXD31C***	DC1M-XXXD51AC***
Extended temp. OP(-20°C~+85°C)	DC1M-XXXD511E***	DC1M-XXXD71AE*** (MLC)	N	DC1M-XXXD51AE***
Wide temp. OP(-40°C~+85°C)	N	DC1M-XXXD71AW***	DC1M-XXXD31W***	N
Note	PIO mode 0-4 UDMA mode 0-4	PIO mode 0-4 UDMA mode 0-7	PIO mode 0-4 UDMA mode 0-4	PIO mode 0-4 UDMA mode 0-4
Notes	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28) ***= flash configuration (internal control code)			

EDC

The Innodisk Embedded Disk Card (EDC) complies with PCMCIA* ATA standards and fits into all platforms with an IDE connector. The Innodisk Embedded Disk Card comes in capacities ranging from 128MB to 32GB and is available in 40-pin and 44-pin connector packages.


Model name	EDC 4000 Vertical Type	EDC 4000 Horizontal Type	InnoLite EDC
Key Features	1.Plastic housing, dust prevention 2.High quality SLC-based solution	1.High quality SLC-based solution 2.Supported mounting hole	Budget friendly MLC-based solution
Connector	40/44 pin	40/44 pin	40/44 pin
Interface	PATA	PATA	PATA
Flash Type	SLC	SLC	MLC
Capacity	128MB~4GB	128MB~8GB	4GB~32GB
Max. Channel	2	2	2
Sequential R/W (MB/sec, max.)	40/25	40/25	40/15
Max. Power consumption	0.75W(5V x 150mA)/0.5W(3.3V x 150mA)	0.75W(5V x 150mA)/0.5W(3.3V x 150mA)	0.75W(5V x 150mA)/0.5W(3.3V x 150mA)
Thermal Sensor	N	N	N
External DRAM Buffer	N	N	N
ATA Security	Y	Y	Y
S.M.A.R.T	Y	Y	Y
Dimension (WxLxH/mm)	40 pin: 60.2 x 27.3 x 6.4 44 pin: 50.3 x 27.3 x 5.8	40pin: 55 x 32.4x H (H:A=12.8,B=9,C=11.9,D=14.6,E=1 8.2,F=18.2) 44pin:48x32.6xH (H:A=7, B=7.2, C=10, D=9.9, E=12.9, F=12.9)	40 pin: 60.2 x 27.3 x 6.4 44 pin: 50.3 x 27.3 x 5.8
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DE0H-XXXD31C*** DE4H-XXXD31C***	DE0P%-XXXD31C*** DE4P%-XXXD31C***	DE0H-XXXD51AC*** DE4H-XXXD51AC***
Extended temp. OP(-20°C~+85°C)	N	N	DE0H-XXXD51AE*** DE4H-XXXD51AE***
Wide temp. OP(-40°C~+85°C)	DE0H-XXXD31W*** DE4H-XXXD31W***	DE0P%-XXXD31W*** DE4P%-XXXD31W***	N
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28) ***= flash configuration (internal control code) %=Horizontal type(A, B, C, D, E, F)		

SD/micro SD

Innodisk SD and microSD cards are single-level flash devices built for rugged applications in the embedded field. As an industrial-grade SD/microSD card, these cards deliver outstanding performance of up to 20MB per second as well as excellent endurance and reliability, especially compared to other cards used in the mobile market. The Innodisk SD and microSD cards are compatible with SD 2.0 standards and support SDHC Class 10. They also feature SMART technology, which monitors the reliability of these SD cards.

Model name	Industrial SD Card	Industrial micro SD Card
Key Features	1.Enhanced power cycling management 2.Golden finger 30" for highly reliable data transfer quality	Enhanced power cycling management
Interface	SD 1.01/2.00	SD 1.01/2.00
Flash Type	SLC/MLC	SLC
Capacity	SLC: 128MB~16GB MLC: 4GB~64GB	1GB~8GB
Max. Channel	1	1
Sequential R/W (MB/sec, max.)	20/16	20/16
Max. Power consumption	0.2W (3.3V x 60mA)	0.17W (3.3V x 50mA)
S.M.A.R.T	Y	Y
Dimension (WxLxH/mm)	24.0 x 32.0 x 2.1	11.0 x 15.0 x 1.0
Environment	Vibration: 5G @7~2000Hz Shock: 50G @ 0.5ms, Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours	
Standard temp. OP(0°C~+70°C)	DS2A-XXXI81C***	DS2M-XXXI81AC***
Extended temp. OP(-20°C~+85°C)	DS2A-XXXI81E***	N
Wide temp. OP(-40°C~+85°C)	N	DS2M-XXXI81AW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G) *** = flash configuration (internal control code)	

Features

- Compatible with SD 1.x/2.0 specification
- Excellent data transfer rate
- Support wear-leveling
- Built-in ECC function
- Support auto-standby, power-off and sleep mode
- Support S.M.A.R.T function

Item	Industrial SD	Consumer SD
Flash Type	SLC / MLC	MLC / TLC
Operational Temperature	-40°C~85°C	-25°C~85°C
Product Longevity Supply (fixed BOM)	Yes	
Sequential R/W Performance (MB/s)	20 / 16	18 / 13
Enhanced power cycling	Over 2,000 cycles	
S.M.A.R.T	Supported	

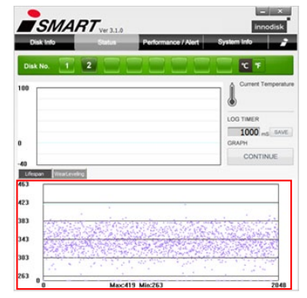
Download our iSMART to Monitor the health of storage

iSMART is a powerful, easy-to-use solid-state drive (SSD) and hard disk drive (HDD) health monitoring tool. It allows system integrators to track important disk information, such as temperature, storage space, bad blocks, lifespan, and firmware, all under one platform. With iSMART, system integrators can better manage disk usage and know exactly when to replace a disk, before the end of its life cycle.

Users can through easy one button access to write-protection, ATA Security, quick erase, and power saving features

Performance/Alert page can show any installed disk's R/W performance

The Life span graph helps user understand the expiry date of Innodisk own's products



iSMART Status page can visualize how the devices utilize Wear Leveling mechanism.

USB

The Innodisk industrial-grade USB series is built as SLC NAND flash and features an attractive small form factor. It provides high-capacity flash memory storage while delivering faster data transmission with high reliability. It also complies with the high-speed USB 2.0 interface and is backward compatible with USB 1.1. The Innodisk USB series has a variety of special features, from plastic and metal housing to secure mounting holes to EDC choices.

Model name	Industrial Nano USB	USB Drive 2SE	USB Drive 2ME
Key Features	1. Only expose 5mm height on the motherboard when applying in practical 2. Smallest USB Drive for indusreial application 3.Very low power consumption	1.Metal Housing for ESD proof 2.Golden finger with 30μ for highly reliable data transfer quality	1..Metal Housing for ESD proof 2.Golden finger with 30μ for highly reliable data transfer quality
Interface	USB 2.0	USB 2.0	USB 2.0
Connector	Type A	Type A	Type A
Flash Type	SLC	SLC	MLC
Capacity	1GB~8GB	512MB~16GB	4GB~32GB
Max. Channel	1	1	1
Sequential R/W (MB/sec, max.)	19/17	28/24	26/10
Max. Power consumption	0.45W (5V x 90mA)	0.85 W (5V X 170mA)	0.85 W (5V X 170mA)
Dimension (WxLxH/mm)	15.4 x 19.4 x 6.9	16.58 x 45.88 x 7.48	16.58 x 45.88 x 7.48
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours		
Standard temp. OP(0°C~+70°C)	DEUN-XXXS23AC***	DEUA1-XXXI72AC***	DEUA1-XXXI72AC***
Extended temp. OP(-20°C~+85°C)	N	N	DEUA1-XXXI72AE***
Wide temp. OP(-40°C~+85°C)	DEUN-XXXS23AW***	DEUA1-XXXI72AW***	N
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)		

Model name	USB EDC Horizontal 2SE	USB EDC Horizontal 2ME	USB EDC Vertical 2SE	USB EDC Vertical 2ME
Key Features	1.Support mounting hole 2.Two kind of connector options	1.Support mounting hole 2.Two kind of connector options	1.Very low profile 2.Low power consumption	1.Very low profile 2.Low power consumption
Interface	USB 2.0	USB 2.0	USB 2.0	USB 2.0
Connector	Standard, 10pin, 2.54mm Low profile, 10pin, 2.00mm	Standard, 10pin, 2.54mm Low profile, 10pin, 2.00mm	Standard, 10pin, 2.54mm	Standard, 10pin, 2.54mm
Flash Type	SLC	MLC	SLC	MLC
Capacity	512MB~32GB	4GB~64GB	512MB~16GB	4GB~32GB
Max. Channel	1	1	1	1
Sequential R/W (MB/sec, max.)	28/24	26 /10	28/24	26/10
Max. Power consumption	0.85 W (5V X 170mA)	0.85 W (5V X 170mA)	0.85 W (5V X 170mA)	0.85 W (5V X 170mA)
Dimension (WxLxH/mm)	26.6x36.9x9.6(Pin Pitch2.54) 26.6x36.9x6.6(Pin Pitch2.00)	26.6x36.9x9.6(Pin Pitch2.54) 26.6x36.9x6.6(Pin Pitch2.00)	15.2 x 34.1 x 6.4	15.2 x 34.1 x 6.4
Environment	Vibration: 20G@7~2000Hz Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours			
Standard temp. OP(0°C~+70°C)	DEUH1-XXXI72AC*** DEUH2-XXXI72AC***	DEUH1-XXXI72AC*** DEUH2-XXXI72AC***	DEUV1-XXXI72AC***	DEUV1-XXXI72AC***
Extended temp. OP(-20°C~+85°C)	N	DEUH1-XXXI72AE*** DEUH2-XXXI72AE***	N	DEUV1-XXXI72AE***
Wide temp. OP(-40°C~+85°C)	DEUH1-XXXI72AW*** DEUH2-XXXI72AW***	N	DEUV1-XXXI72AW***	N
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)			

nanoSSD

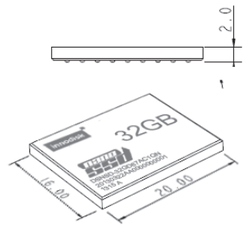
The Innodisk nanoSSD is an integrated SATA storage device. It combines Innodisk ID167 NAND flash controller and latest NAND flash in a JEDEC MO-276(SATA μSSD) form factor with one single ball grid array (BGA) package, which makes nanoSSD within a tiny dimension, and very easy to design in. The Innodisk nanoSSD , supporting SATA III 6.0Gbp/s , offers excellent high data transfer rates, along with lower power consumption. It is an ideal solution for any kind of miniaturization applications.

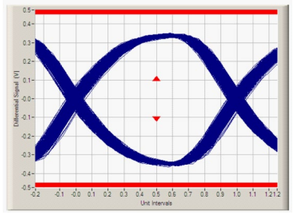
Benefits of nanoSSD

- Chip type, easy to design in without mechanical interference
- SATA interface, highly compatible with x86 system
- Excellent data transfer rates
- Fully compliant with industrial standard
- Suitable for ultra-thin or compact system
- Zero peripheral circuit

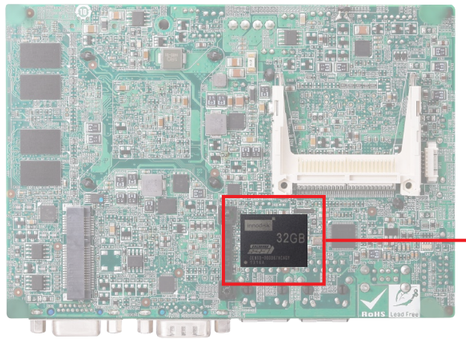
Features

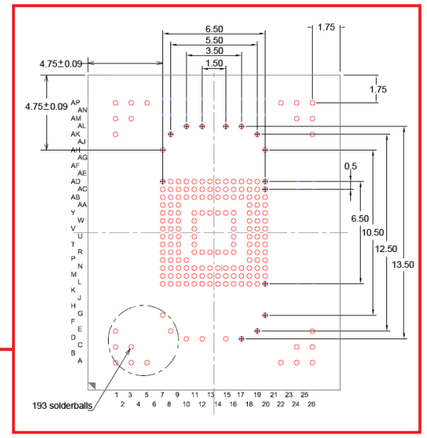
- Integrated NAND Flash controller with Flash in a single chip
- Compliant with JEDEC MO-276 (SATA μSSD) specification
- Adopted SATA III interface with BGA package
- Extendable DRAM design





The Innodisk nanoSSD SATA Eye Pattern





The Innodisk nanoSSD mechanical drawing

Moedel name	nanoSSD 3SE	nanoSSD 3ME
Key Features	1.Using BGA package to make controller and flash as single chip 2.Adopt SATA III interface,well Compatibility 3.Complaint with JEDEC MO-276 SPEC, Footprint 11 (n=156)	
Interface	SATA III 6.0Gb/s	
Flash Type	SLC	MLC
Capacity	2~16GB	4~32GB
Max. Channel	4	4
Sequential R/W (MB/sec, max.)	480/175	480/90
Max. Power consumption	0.99W (300mA x3.3v)	0.99W (300mA x3.3v)
Thermal Sensor	Y	Y
External DRAM Buffer	Optional	Optional
iCell	Optional	Optional
TRIM	Y	Y
ATA Security	Y	Y
S.M.A.R.T	Y	Y
Dimension (WxLxH/mm)	16.0x20.0x2.0	16.0x20.0x2.0
Environment	Shock: 1500G@0.5ms Storage Temperature: -55°C ~ +95°C MTBF: >3 million hours	
Standard temp. OP (0°C~+70°C)	DENSD-XXXD67AC***	DENSD-XXXD67AC***
Wide temp. OP (-40°C~+85°C)	DENSD-XXXD67AW***	DENSD-XXXD67AW***
Note	xxx = density (02GB=02G, 04GB=04G, 08GB=08G, 16GB=16G, 32GB=32G, 64GB=64G, 128GB=A28, 256GB=B56, 512GB=C12) ***= flash configuration (internal control code)	

DRAM Modules

Innodisk's industrial-grade DRAM modules are high-quality memory modules that have been specially designed and developed for industrial PCs and other PC-like applications. Our specialized firmware team is ready to provide system designers with a complete turn-key solution for any engineering requirements they may have.

Innodisk's DRAM modules are categorized to meet different systems' needs, and support DDR 3, DDR 2, DDR, and SDRAM. Our DRAM modules are available in 4 product lines, including Embedded, Server, Wide Temperature, and Special Customized.

Innodisk's comprehensive range of DRAM modules includes everything from Unbuffered DIMM, Unbuffered SO-DIMM, Unbuffered ECC DIMM, Unbuffered ECC SO-DIMM, Mini-DIMM and LR-DIMM, registered DIMM, and coated DRAM.

Embedded

Embedded Long-DIMM

Long-DIMM modules are general DRAM modules meant to be used as standard products for general embedded applications. These modules are compliant with JEDEC standards and available in DDR1, DDR2, and DDR3.

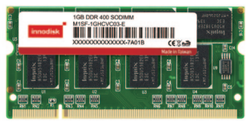
Series	Standard Solution	Standard Solution
Module Type	DDR3 LONG DIMM	DDR2 LONG DIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	800Mhz/667Mhz/533Mhz/400Mhz
Capacity	1GB/2GB/4GB/8GB	512MB/1GB/2GB/4GB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	240pin	240pin
Width	64Bits	64Bits
Voltage	1.5V/1.35V	1.8V
PCB Height	1.18 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃

Series	Standard Solution	Standard Solution
Module Type	DDR LONG DIMM	SDRAM LONG DIMM
Frequency	400Mhz/333Mhz/266MHZ	PC133/PC100
Capacity	256MB/512MB/1GB	128MB/256MB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	184pin	168pin
Width	64Bits	64Bits
Voltage	2.6V	3.3V
PCB Height	1.25 Inches	1.25 Inches
Operation Temperature	0 ~ 70℃	0 ~ 70℃

Embedded SO-DIMM

Small-outline DIMMs (SO-DIMM) modules are general DRAM modules meant to be uses as standard products for embedded applications with limited space. These modules are compliant with JEDEC standards and help in eliminating the need for changing designs due to space issues.

Series	Standard Solution	Standard Solution
Module Type	DDR3 SODIMM	DDR2 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	800Mhz/667Mhz/533Mhz/400Mhz
Capacity	1GB/2GB/4GB/8GB	512MB/1GB/2GB/4GB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	204pin	200pin
Width	64Bits	64Bits
Voltage	1.5V/1.35V	1.8V
PCB Height	1.18 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃



Series	Standard Solution	Standard Solution
Module Type	DDR SODIMM	SDRAM SODIMM
Frequency	400Mhz/333Mhz/266MHZ	PC133/PC100
Capacity	256MB/512MB/1GB	128MB/256MB/512MB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	200pin	144pin
Width	64Bits	64Bits
Voltage	2.6V	3.3V
PCB Height	1.25 Inches	1.25 Inches
Operation Temperature	0 ~ 70℃	0 ~ 70℃

Embedded Low-Profile DIMM

Low-Profile DIMM modules are specialized for use in 1U systems, such as the blade server data center, where the system height is lower than 1.18 inches. The design of these modules improves air flow inside a compact system and reduces thermal impact.

Series	Very Low-Profile (VLP) Solution	Very Low-Profile (VLP) Solution	Very Low-Profile (VLP) Solution
Module Type	DDR3 LONG DIMM	DDR3 SODIMM	DDR2 LONG DIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	1600Mhz/1333Mhz/1066Mhz	800Mhz/667Mhz/533Mhz/400Mhz
Capacity	1GB/2GB/4GB/8GB	1GB/2GB/4GB/8GB	1GB/2GB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	240pin	204pin	240pin
Width	64Bits	64Bits	64Bits
Voltage	1.5V/1.35V	1.5V/1.35V	1.8V
PCB Height	0.72 Inches	0.72 Inches	0.72 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃	0 ~ 85℃

Series	Very Low-Profile (VLP) Solution	Very Low-Profile (VLP) Solution	Very Low-Profile (VLP) Solution
Module Type	DDR2 SODIMM	DDR LONG DIMM	SDRAM LONG DIMM
Frequency	800Mhz/667Mhz/533Mhz/400Mhz	400Mhz/333Mhz/266MHZ	PC133/PC100
Capacity	512MB/1GB	512MB	128MB/256MB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	200pin	184pin	168pin
Width	64Bits	64Bits	64Bits
Voltage	1.8V	2.6V	3.3V
PCB Height	0.72 Inches	0.72 Inches	0.72 Inches
Operation Temperature	0 ~ 85℃	0 ~ 70℃	0 ~ 70℃

Embedded Unbuffered DIMM with ECC

ECC modules are designed to detect and correct single-bit errors that occur during data storage and transmission. ECC modules use Hamming Code or Triple Modular Redundancy for error detection and correction, and manage error corrections on their own, without requesting that the data source resend original data.

Series	Unbuffered w/ECC Solution	Unbuffered w/ECC Solution
Module Type	DDR3 LONG DIMM	DDR3 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	1600Mhz/1333Mhz/1066Mhz
Capacity	1GB/2GB/4GB/8GB	1GB/2GB/4GB/8GB
Function	With ECC Unbuffer Memory	With ECC Unbuffer Memory
Pin Number	240pin	204pin
Width	72Bits	72Bits
Voltage	1.5V/1.35V	1.5V/1.35V
PCB Height	1.18 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃

Series	Unbuffered w/ECC Solution	Unbuffered w/ECC Solution	Unbuffered w/ECC Solution
Module Type	DDR2 LONG DIMM	DDR2 SODIMM	DDR LONG DIMM
Frequency	800Mhz/667Mhz/533Mhz/400Mhz	800Mhz/667Mhz/533Mhz/400Mhz	400Mhz/333Mhz/266MHZ
Capacity	1GB/2GB	512MB/1GB/2GB	512MB/1GB
Function	With ECC Unbuffer Memory	With ECC Unbuffer Memory(PLL)	With ECC Unbuffer Memory
Pin Number	240pin	200pin	184pin
Width	72Bits	72Bits	72Bits
Voltage	1.8V	1.8V	2.6V
PCB Height	1.18 Inches	1.18 Inches	1.25 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃	0 ~ 70℃

Server

Server Registered DIMM

Registered DIMM modules are designed to ensure data integrity at both the device- and system-level of the server. In addition, all Innodisk Registered DIMM modules are tested for a 24-hour period in our special-built factory to ensure stable performance.

Series	Server Solution	Server Solution
Module Type	DDR3 LONG DIMM	DDR2 LONG DIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	800Mhz/667Mhz/533Mhz/400Mhz
Capacity	1GB/2GB/4GB/8GB/16GB/32GB	1GB/2GB/4GB
Function	Registered DIMM	Registered DIMM
Pin Number	240pin	240pin
Width	72Bits	72Bits
Voltage	1.5V/1.35V	1.8V
PCB Height	1.18 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃

Server LR-DIMM

Load-reduction DIMM modules are designed with a special buffer to reduce heavy-load data to single-load data (up to 8-rank DIMM). In addition, these modules allow more DIMMs to be added per channel in order to reduce power levels and increase memory capacity and system speed.

Series	Server Solution	Server Solution
Module Type	DDR3 Load reduced DIMM	DDR3 Load reduced DIMM
Frequency	1333Mhz/1066Mhz	1333Mhz/1066Mhz
Capacity	32GB	64GB
Function	IMB	IMB
Pin Number	240pin	240pin
Width	72Bits	72Bits
Voltage	1.5V/1.35V	1.5V/1.35V
PCB Height	1.18 Inches	2.21 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃

Server Unbuffered DIMM with ECC

ECC modules are designed to detect and correct single-bit errors that occur during data storage and transmission. ECC modules use Hamming Code or Triple Modular Redundancy for error detection and correction, and manage error corrections on their own, without requesting that the data source resend original data.

Series	Unbuffered w/ECC Solution	Unbuffered w/ECC Solution
Module Type	DDR3 LONG DIMM	DDR3 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	1600Mhz/1333Mhz/1066Mhz
Capacity	1GB/2GB/4GB/8GB	1GB/2GB/4GB/8GB
Function	With ECC Unbuffer Memory	With ECC Unbuffer Memory
Pin Number	240pin	204pin
Width	72Bits	72Bits
Voltage	1.5V/1.35V	1.5V/1.35V
PCB Height	1.18 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃

Series	Unbuffered w/ECC Solution	Unbuffered w/ECC Solution	Unbuffered w/ECC Solution
Module Type	DDR2 LONG DIMM	DDR2 SODIMM	DDR LONG DIMM
Frequency	800Mhz/667Mhz/533Mhz/400Mhz	800Mhz/667Mhz/533Mhz/400Mhz	400Mhz/333Mhz/266MHZ
Capacity	1GB/2GB	512MB/1GB/2GB	512MB/1GB
Function	With ECC Unbuffer Memory	With ECC Unbuffer Memory(PLL)	With ECC Unbuffer Memory
Pin Number	240pin	200pin	184pin
Width	72Bits	72Bits	72Bits
Voltage	1.8V	1.8V	2.6V
PCB Height	1.18 Inches	1.18 Inches	1.25 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃	0 ~ 70℃

Wide Temperature

Wide Temperature Unbuffered DIMM

Designed for industrial systems, Innodisk's Wide Temperature DRAM modules are best suited for applications that must work in extreme temperatures. These modules use industrial-grade SDRAM components with 30u" Gold finger to ensure that the memory maintains its high-quality signal, even at temperatures as low as -40ºC or as high as 85ºC.

Series	Wide Temperature	Wide Temperature	Wide Temperature
Module Type	DDR3 LONG DIMM	DDR2 LONG DIMM	DDR LONG DIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	800Mhz/667Mhz/533Mhz/400Mhz	400Mhz/333Mhz/266MHZ
Capacity	1GB/2GB/4GB/8GB	512MB/1GB/2GB/4GB	512MB/1GB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	240pin	240pin	184pin
Width	64Bits	64Bits	64Bits
Voltage	1.5V/1.35V	1.8V	2.6V
PCB Height	1.18 Inches	1.18 Inches	1.18 Inches
Operation Temperature	-40 ~ 85℃	-40 ~ 85℃	-40 ~ 85℃

Wide Temperature Unbuffered SO-DIMM

Designed for industrial systems, Innodisk's Wide Temperature DRAM modules are best suited for applications that must work in extreme temperatures. These modules use industrial-grade SDRAM components with 30u" gold finger to ensure that the memory maintains its high-quality signal, even at temperatures as low as -40ºC or as high as 85ºC.

Series	Wide Temperature	Wide Temperature	Wide Temperature
Module Type	DDR3 SODIMM	DDR2 SODIMM	DDR SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	800Mhz/667Mhz/533Mhz/400Mhz	400Mhz/333Mhz/266MHZ
Capacity	1GB/2GB/4GB/8GB	512MB/1GB/2GB/4GB	512MB/1GB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	204pin	200pin	200pin
Width	64Bits	64Bits	64Bits
Voltage	1.5V/1.35V	1.8V	2.6V
PCB Height	1.18 Inches	1.18 Inches	1.18 Inches
Operation Temperature	-40 ~ 85℃	-40 ~ 85℃	-40 ~ 85℃

Special / Customized

32-Bit

32-Bit DRAM modules are customized for the non-x86 design system and work especially well on Advanced RISC Machine (ARM) base tablet PCs and mobile devices.

Series	32 bits	32 bits
Module Type	DDR3 SODIMM	DDR2 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	800Mhz/667Mhz/533Mhz/400Mhz
Capacity	1GB/2GB	128MB/1GB/2GB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	204pin	200pin
Width	32Bits	32Bits
Voltage	1.5V/1.35V	1.8V
PCB Height	1.18 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃

Rugged

Rugged DIMM modules are designed with a pair of mounting holes for more secure mounting on the CPU board. Resistant to shock and vibration, they allow stable system operation for automobile and harsh environment applications. In addition, these modules are compliant with JEDEC standards, with dimensions extended by 10 mm.

Series	Rugged DIMM (Wide Temp)	Rugged DIMM
Module Type	DDR2 SODIMM	DDR2 SODIMM
Frequency	800Mhz/667Mhz/533Mhz/400Mhz	800Mhz/667Mhz/533Mhz/400Mhz
Capacity	1GB/2GB	1GB/2GB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	200pin	200pin
Width	64Bits	64Bits
Voltage	1.8V	1.8V
PCB Height	1.57 Inches	1.57 Inches
Operation Temperature	-40 ~ 85℃	0 ~ 85℃

Mini DIMM

VLP Mini DIMM modules are designed with 17.9mm high dimensions specifically for networking applications. They are compliant with JEDEC standards and are designed to improve thermal resistance. With the ECC function, the VLP Mini DIMM also ensures that data is corrected when corrupted data bits are found during data retrieval.

Series	Mini DIMM-VLP	Mini DIMM-VLP
Module Type	DDR3 SODIMM	DDR3 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	1600Mhz/1333Mhz/1066Mhz
Capacity	2GB/4GB/8GB	2GB/4GB/8GB
Function	None ECC Unbuffer Memory	with ECC Unbuffer Memory
Pin Number	244pin	244pin
Width	64Bits	72Bits
Voltage	1.35V / 1.5V	1.35V / 1.5V
PCB Height	0.72 Inches	0.72 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃

Series	Mini R-DIMM-VLP	Mini R-DIMM
Module Type	DDR3 SODIMM	DDR3 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	1600Mhz/1333Mhz/1066Mhz
Capacity	2GB/4GB/8GB	2GB/4GB/8GB/16G
Function	Registered Memory	Registered Memory
Pin Number	244pin	244pin
Width	72Bits	72Bits
Voltage	1.35V / 1.5V	1.35V / 1.5V
PCB Height	0.72 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃

Single Side

Single Side modules are often used in small form factor (SFF) systems that require a high-density module to be installed in a strictly limited space. The Innodisk-designed low-profile PCB with a JEDEC standard connector requirement fits into any SFF system—something that most standard modules cannot do—without any modification to the hardware design. Single Side modules deliver excellent thermal resistance and help make systems more reliable.

Series	Single DIMM(Front Side)	Single DIMM(Back Side)
Module Type	DDR3 SODIMM	DDR3 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz	1600Mhz/1333Mhz/1066Mhz
Capacity	1GB/2GB/4GB/8GB	1GB/2GB/4GB/8GB
Function	Non-ECC Unbuffer Memory	Non-ECC Unbuffer Memory
Pin Number	204pin	204pin
Width	64Bits	64Bits
Voltage	1.35V / 1.5V	1.35V / 1.5V
PCB Height	1.18 Inches	1.18 Inches
Operation Temperature	0 ~ 85℃	0 ~ 85℃

Registered SO-DIMM

Registered SO-DIMM modules are designed to ensure data integrity at both the device- and system-level of server applications with space limitations. In addition, these modules are tested for a 24-hour period in our special-built factory to ensure stabile performance.

Series	Registered SO-DIMM
Module Type	DDR3 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz
Capacity	1GB/2GB/4GB/8GB
Function	Registered SO-DIMM Memory
Pin Number	204pin
Width	72Bits
Voltage	1.35V / 1.5V
PCB Height	1.18 Inches
Operation Temperature	0 ~ 85℃

Unbuffered SO-DIMM with ECC

ECC modules are designed to detect and correct single-bit errors that occur during data storage and transmission. These modules use Hamming Code or Triple Modular Redundancy for error detection and correction, and manage error corrections on their own, without requesting that the data source resend original data.

Series	Unbuffered w/ECC Solution
Module Type	DDR3 SODIMM
Frequency	1600Mhz/1333Mhz/1066Mhz
Capacity	1GB/2GB/4GB/8GB
Function	With ECC Unbuffer Memory
Pin Number	204pin
Width	72Bits
Voltage	1.5V/1.35V
PCB Height	1.18 Inches
Operation Temperature	0 ~ 85℃

Real specification is based on officially launched datasheet.

Absolute Service

Service is not just what we do. It's who we are.

Absolute Service is our pledge and our guide. It infuses everything we do at Innodisk.

Absolute Service is our promise to deliver the most comprehensive service in every situation. It's the philosophy that guides us in all interactions with our customers and business partners. It's the spirit of friendliness and enthusiasm that fills each member of the Innodisk team.

Absolute Service is our absolute commitment to our customers.

For more warranty details, please contact the Innodisk Sales Department or visit our website:
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