Apacer

Apacer Industrial Solutions (SSD & DRAM)

Access Endless Possibilities for a Sustainable Tomorrow

Brochure

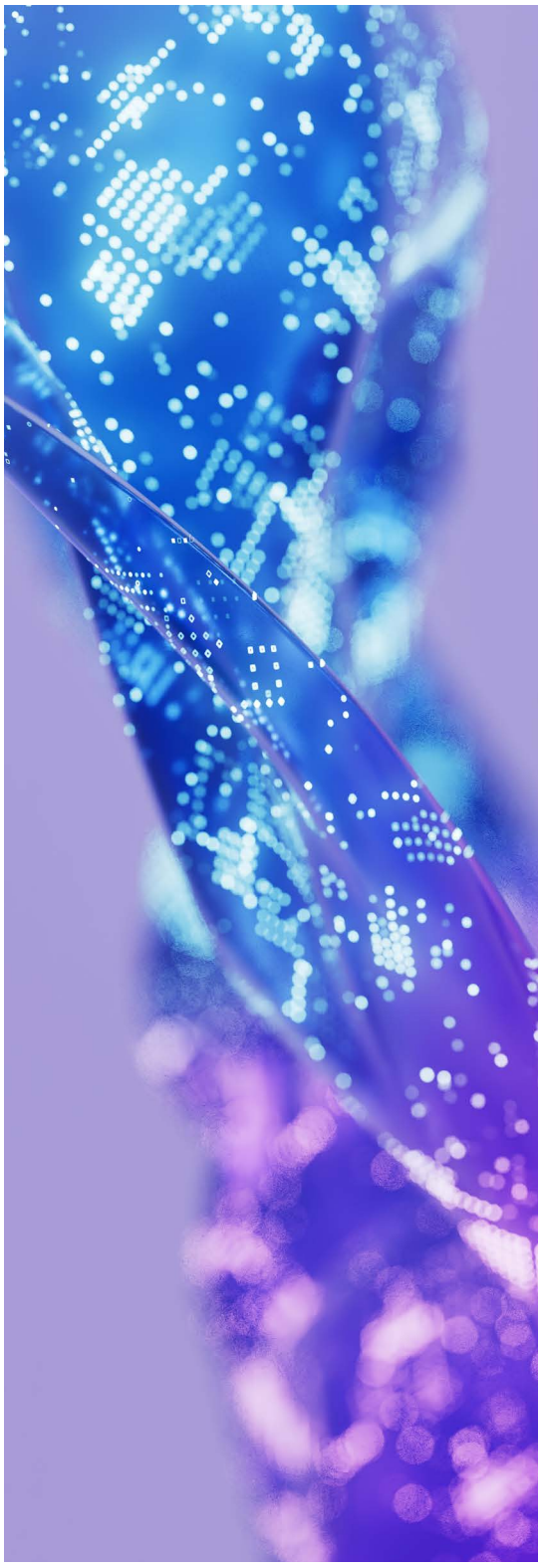
In a World

Where Data Drives Every Decision,

Apacer leads the charge in technology innovation, providing state-of-the-art SSD and DRAM solutions tailored to both consumer and industrial needs. From purpose-driven applications to immersive entertainment, we ensure seamless data storage, fast processing, and unmatched reliability for a wide spectrum of use cases.

At Apacer, we go beyond delivering products — we partner with you to solve challenges, optimize performance, and future-proof your operations. With our commitment to excellence and a focus on empowering businesses and individuals, we help you unlock the full potential of your data.

Access the Best — Where Reliability Meets Innovation.



> **"At Apacer, innovation is at the heart of everything we do. We're unlocking the full potential of data, no matter where it resides, and delivering transformative solutions that drive business growth and enrich lives worldwide."**

Gibson Chen
President of Apacer

Tailored Storage Solutions for Every Industry Need

In today's digital era, industries face growing challenges in managing data, ensuring security, and maintaining efficiency.

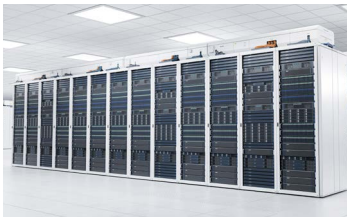
Apacer delivers reliable, high-performance storage solutions to address these obstacles, empowering businesses to streamline operations, boost productivity, and drive digital transformation.

From enabling automation and securing networks to supporting rugged, mission-critical applications, we provide the ideal storage foundation for success in a fast-changing world.

Retail Devices
Optimize POS systems with durable storage to streamline transactions and enhance service.

Factory Automation
Increase productivity and uptime with high-performance storage.

Rugged Systems
Built to endure extreme conditions, ensuring reliable performance for critical applications.

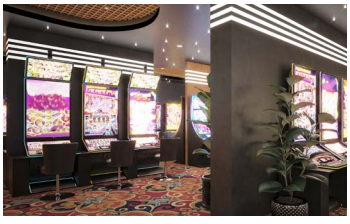


Server & Networking
Scalable solutions to accelerate connectivity and enhance infrastructure.

Transportation
Ensure smoother transportation systems and operational efficiency with real-time data processing.

Healthcare
Reliable solutions ensuring data integrity and seamless operation of healthcare devices.

Surveillance
Ensure reliable 24/7 recording with superior endurance for uninterrupted surveillance.



Casino Gaming
Secure, high-endurance storage for seamless gaming and sensitive data protection.

Purpose-built SSD & DRAM for Industrial Applications

Apacer offers innovative storage solutions tailored to meet the unique demands of industrial applications. Designed for reliability, endurance, and performance, our purpose-built SSD and DRAM ensure seamless operation in challenging environments, from heavy workloads to mission-critical tasks, driving business success.

Featured SSD Technologies for Industrial Applications

Data Integrity

TAIWAN EXCELLENCE 2025

CoreRescue Series

Seamless System Recovery Made Simple

Unexpected system crashes and data corruption can bring business operations to a halt. Apacer's CoreRescue series provides a one-step recovery process with 4 versatile options:

1. **CoreRescue Button** for instant recovery
2. **CoreRescue USR** for USB self recovery
3. **CoreRescue OOB** for remote out-of-band management
4. **CoreRescue ASR** for automated system recovery

TAIWAN EXCELLENCE 2022

CoreSnapshot Series

Instant Recovery, Minimal Downtime

Apacer's CoreSnapshot enables one-second recovery from system failures or data corruption through intelligent SSD firmware, ensuring quick restoration and minimal downtime.

Power Stability

DataDefender™ Plus

Real-Time Voltage Monitoring

Apacer DataDefender™ Plus enables real-time monitoring of power voltage and recording voltage instability counts in the S.M.A.R.T. log.

CorePower

Ensuring Data Stability During Power Failures

CorePower integrates a backup power supply to ensure stable data transmission, minimize data loss, and ensure uninterrupted operations during unexpected power outages.

CoreVolt 2

Data Protection Against Voltage Instability

Real-time voltage detection continuously monitors input voltage and identify voltage instability. During fluctuations, the tantalum polymer capacitors temporarily supply backup power to stabilize the voltage, ensuring uninterrupted operation.

Security

TCG Opal 2.0

Safeguard Your Data with Built-in Encryption
Apacer's TCG Opal 2.0 compliant self-encrypting drives (SEDs) protect sensitive data with built-in AES encryption, ensuring secure storage without impacting system performance.

Write Protect

Shield Your SSD from Unauthorized Changes
Apacer's Write Protect technology restricts SSDs to read-only mode, ensuring no unauthorized data is written and safeguarding internal data from tampering. It can be activated via hardware or software controls.

Longevity

SLC-liteX

Redefining Endurance with 100,000 P/E Cycles
Apacer's SLC-liteX technology delivers up to 100,000 P/E cycles, providing exceptional durability and reliability for long-term use.

Over-Provisioning

Extending SSD Lifespan and Performance Stability
Over-provisioning reserves memory for garbage collection, wear-leveling, and bad block management, boosting SSD lifespan and ensuring stable performance.

Value-added Software

SSDWidget 2.0

Proactive SSD Health Management for Continuity
Apacer's SSDWidget 2.0 provides a user-friendly interface for real-time SSD health monitoring and workload analysis, preventing failures from excessive tasks in demanding environments.

Out-of-Band Management (OOB)

Manage Systems Anytime, Anywhere
Apacer's Out-of-Band Management ensures remote system control, enabling monitoring, troubleshooting, and recovery—even during system crashes or attacks.

Durability

CoreGlacier™

Cool Your SSD for Peak Performance

Apacer's CoreGlacier™ enhances SSD cooling by efficiently transferring heat to a fluid medium, protecting NAND Flash components and preventing hardware damage or data corruption.

Sidefill

Reinforce Connections for Durability

Apacer's Sidefill technology fortifies solder joint connections, making them more robust and resistant to vibrations while facilitating heat dissipation to prevent thermal damage.

Wide-temperature

Reliable Operation in Extreme Environments

Apacer's Wide-temperature SSDs operate seamlessly in temperatures ranging from -40°C to 85°C, ensuring reliability in harsh and fluctuating conditions.

Thermal Throttling

Ensure Performance Under Heat

Apacer's Thermal Throttling dynamically adjusts frequency to manage device temperature, sustaining performance and enhancing data reliability during overheating conditions.

30µ Gold Finger

Enhance Signal Integrity and Durability

Apacer equips memory modules with 30µ gold-plated gold fingers, improving data transmission reliability and resistance to environmental hazards.

CoreEnergy

Application-aware SSD Power Management

CoreEnergy delivers effective energy savings, enabling users to configure energy modes via software and hardware tailored to specific application needs, significantly reducing power usage, and enhancing energy efficiency.

Featured DRAM Technologies for Industrial Applications

Anti-Sulfuration

Extend System Lifespan with Anti-Sulfuration Technology
Apacer's world-first patented Anti-Sulfuration memory modules use an exclusive alloy to replace standard silver electrodes, addressing corrosion issues and significantly enhancing system longevity.

Underfill

Enhance Reliability Against Shock and Vibration
Apacer's Underfill technology strengthens solder joints between the solder balls and printed circuit boards, improving product reliability and resistance to thermal and mechanical shocks.

Wide Temperature

Reliable Operation in Extreme Environments
Apacer's Wide-temperature memory modules operate seamlessly in temperatures ranging from -40°C ~ 85°C, ensuring reliability in harsh and fluctuating conditions.

30µ Gold Finger

Enhance Signal Integrity and Durability
Apacer equips memory modules with 30µ gold-plated gold fingers, improving data transmission reliability and resistance to environmental hazards.

Extremely Rugged XR-DIMM

Boost Durability with Ruggedized Design
Apacer's Rugged XR-DIMM features a durable 300-pin connector and mounting holes, offering superior anti-vibration and anti-shock performance. Certified with RTCA DO-160G/MIL-STD-810G, it ensures enhanced reliability for mission-critical applications.

Conformal Coating

Protect Against Dust and Moisture Damage
Apacer's Conformal Coating applies a protective film to printed circuit boards, safeguarding devices from dust ingress and moisture exposure, ensuring reliable performance in harsh environments.

Fully Lead-free Resistor

Eco-friendly for Future Sustainability, No RoHS Exemptions Required
Apacer's world-first Fully Lead-free Resistor technology, surpassing RoHS standards without requiring exemptions. This technology is widely implemented in Apacer DDR5 memory modules, reducing environmental impact and setting a new benchmark for eco-friendly practices.

PCIe

Features

- **Superb Performance with Low Latency** - Enhances processing speed and reduces delays for better efficiency.
- **NVMe Specification Compliance** - Ensures smooth integration with existing systems.
- **Thermal Throttling Support** - Prevents overheating, ensuring stable performance under load.
- **End-to-End Data Protection** - Protects sensitive data with comprehensive security.

Model	PT160-M280	PV930-M280	PV250-M280	PT250-M280
Form Factor	M.2 2280	M.2 2280	M.2 2280	M.2 2280
Interface	PCIe Gen4 x4	PCIe Gen4 x4	PCIe Gen4 x4	PCIe Gen4 x4
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	4TB~8TB	480GB~1920GB	240GB~3840GB	64GB~2TB
Max. Sequential R/W (MB/sec.)	6970/2310	7130/6105	3675/3215	3700/3485
Max. Random R/W (IOPS)	909K/517K	1062K/914K	565K/560K	570K/677K
External DRAM Buffer	Yes	Yes	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C (8TB not support)	STD: 0°C ~ 70°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C CET: -25°C ~ 85°C

Model	PT250-M242	PT250-M230	PV25P-M280	PT25P-M280
Form Factor	M.2 2242	M.2 2230	M.2 2280	M.2 2280
Interface	PCIe Gen4 x4	PCIe Gen4 x4	PCIe Gen4 x4	PCIe Gen4 x4
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	64GB~1TB	64GB~1TB	240GB~3840GB	64B~2TB
Max. Sequential R/W (MB/sec.)	3740/3020	3740/3020	3675/3215	3700/3505
Max. Random R/W (IOPS)	429K/624K	429K/624K	565K/600K	556K/691K
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C CET: -25°C ~ 85°C	STD: 0°C ~ 70°C CET: -25°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C

Model	PT25P-M242	PH160-M280	PH930-M280	PH250-M280
Form Factor	M.2 2242	M.2 2280	M.2 2280	M.2 2280
Interface	PCIe Gen4 x4	PCIe Gen4 x4	PCIe Gen4 x4	PCIe Gen4 x4
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	64GB~1TB	1280GB/1920GB	160GB~640GB	160GB~640GB
Max. Sequential R/W (MB/sec.)	3695/3120	7345/6155	7105/5955	3740/3240
Max. Random R/W (IOPS)	348K/617K	1102K/1378K	1291K/934K	585K/623K
External DRAM Buffer	No	Yes	Yes	No
Operating Temperature (°C)	STD: 0°C ~ 70°C	WT: -40°C ~ 85°C	STD: 0°C ~ 70°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

Model	PH920-M280	PH250-M242	PH250-M230	PH25P-M280
Form Factor	M.2 2280	M.2 2242	M.2 2230	M.2 2280
Interface	PCIe Gen3 x4	PCIe Gen4 x4	PCIe Gen4 x4	PCIe Gen4 x4
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	160GB~640GB	160GB~320GB	80GB~320GB	160GB~640GB
Max. Sequential R/W (MB/sec.)	3530/2735	3740/2855	3740/2855	3360/3000
Max. Random R/W (IOPS)	423K/276K	575K/544K	575K/544K	545K/588K
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

Model	PH25P-M242	PV920-M280	PV230-M280	PV230-M280
Form Factor	M.2 2242	M.2 2280	M.2 2280	M.2 2280 B+M Key
Interface	PCIe Gen4 x4	PCIe Gen3 x4	PCIe Gen3 x4	PCIe Gen3 x2
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	80GB~320GB	240GB~1920GB	120GB~1920GB	120GB~1920GB
Max. Sequential R/W (MB/sec.)	3740/2890	3535/2745	3560/2705	1865/1675
Max. Random R/W (IOPS)	545K/547K	388K/276K	325K/323K	325K/295K
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

Model	PT230-M280	PV230-M242	PT230-M242	PT15R-M242
Form Factor	M.2 2280	M.2 2242	M.2 2242	M.2 2242
Interface	PCIe Gen3 x4	PCIe Gen3 x4	PCIe Gen3 x4	PCIe Gen3 x4
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	128GB~2TB	120GB~906GB	128GB~1TB	64GB~512GB
Max. Sequential R/W (MB/sec.)	3560/2705	3560/2705	3560/2550	2445/1750
Max. Random R/W (IOPS)	325K/323K	325K/323K	325K/317K	235K/399K
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C	STD: 0°C ~ 70°C

Model	PV250-CFX	PT250-CFX	PT25P-CFX
Form Factor	CFexpress 2.0 Type B	CFexpress 2.0 Type B	CFexpress 2.0 Type B
Interface	PCIe Gen4 x2	PCIe Gen4 x2	PCIe Gen4 x2
NAND Flash Type	3D TLC	3D TLC	3D TLC
Capacity	120GB~960GB	128GB~1TB	128GB~1TB
Max. Sequential R/W (MB/sec.)	3740/3020	3735/2995	3700/3090
Max. Random R/W (IOPS)	569K/593K	550K/598K	323K/577K
External DRAM Buffer	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C	STD: 0°C ~ 70°C

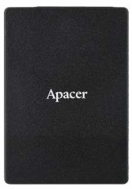
Model	PH250-CFX	PH25P-CFX	PV180-uSSD	PH180-uSSD
Form Factor	CFexpress 2.0 Type B	CFexpress 2.0 Type B	PCIe BGA SSD (291 Ball)	PCIe BGA SSD (291 Ball)
Interface	PCIe Gen4 x2	PCIe Gen4 x2	PCIe Gen4 x4	PCIe Gen4 x4
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	160GB~320GB	80GB~320GB	240GB~960GB	40GB~320GB
Max. Sequential R/W (MB/sec.)	3740/2770	3740/2770	3745/3015	5000/4300
Max. Random R/W (IOPS)	570K/573K	570K/573K	392K/710K	770K/1000K
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	WT: -40°C ~ 85°C	WT: -40°C ~ 85°C

SATA 2.5"

Features

- **Global Wear-leveling Technology** - Ensures having lower erase counts to extend SSD lifespan.
- **Flash Bad-block Management** - Manages cell blocks that fail over time.
- **S.M.A.R.T. and SSDWidget 2.0 Support** - Provide proactive SSD health management.
- **Power Failure Management** - Ensures data transmission when experiencing unstable power supply.

Model	ST180-25	SV240-25	SV250-25	SH250-25
Form Factor	2.5"	2.5"	2.5"	2.5"
Interface	SATA 3.1 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	1TB~16TB	120GB~1920GB	120GB~1920GB	40GB~640GB
Max. Sequential R/W (MB/sec.)	555/520	565/505	560/500	550/495
Max. Random R/W (IOPS)	82K	98K/78K	52K/68K	55K/63K
External DRAM Buffer	Yes	Yes	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C (16TB not supported)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

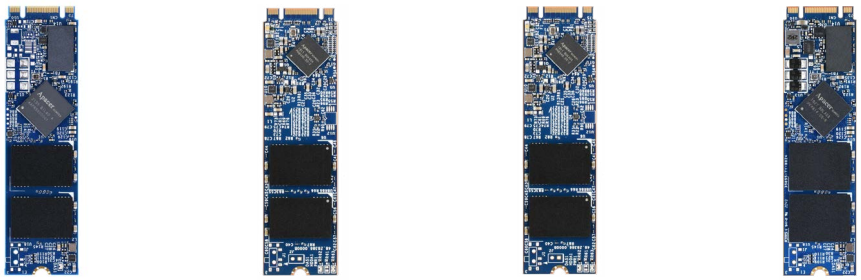


Model	ST250-25	SV24P-25	SH25P-25	SV25V-25
Form Factor	2.5"	2.5"	2.5"	2.5"
Interface	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	64GB~2TB	120GB~1920GB	40GB~640GB	120GB~1920GB
Max. Sequential R/W (MB/sec.)	560/515	565/510	560/505	555/500
Max. Random R/W (IOPS)	51K/66K	98K/78K	59K/63K	51K/64K
External DRAM Buffer	No	Yes	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C CET: -25°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

SATA M.2

Features

- **Global Wear-leveling and Block Management** - Ensure having lower erase counts to extend SSD lifespan.
- **Built-in ATA Secure Erase and S.M.A.R.T. Functions** - Restore and manage the drives.
- **TRIM Support** - Improves compatibility, endurance and performance.
- **Thermal Throttling (Optional)** - Ensures performance under heat.



Model	SV240-M280	SH250-M280	ST250-M280	SV24P-M280
Form Factor	M.2 2280	M.2 2280	M.2 2280	M.2 2280
Interface	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	120GB~1920GB	40GB~640GB	64GB~2TB	120GB~1920GB
Max. Sequential R/W (MB/sec.)	565/505	550/485	560/515	565/510
Max. Random R/W (IOPS)	98K/76K	56K/63K	51K/67K	98K/78K
External DRAM Buffer	Yes	No	No	Yes
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C CET: -25°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C




Model	SV25P-M280	SV250-M242	ST250-M242	SH25P-M242
Form Factor	M.2 2280	M.2 2242	M.2 2242	M.2 2242
Interface	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	120GB~1920GB	120GB~960GB	64GB~1TB	40GB~160GB
Max. Sequential R/W (MB/sec.)	560/510	560/470	560/515	560/505
Max. Random R/W (IOPS)	55K/72K	50K/68K	51K/67K	56K/69K
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

SATA MO-297/7-pin Module

Features

- **Global Wear-leveling and Block Management** - Ensure having lower erase counts to extend SSD lifespan.
- **Built-in ATA Secure Erase and S.M.A.R.T. Functions** - Restore and manage the drives.
- **TRIM Support** - Improves compatibility, endurance and performance.




Model	SV240-297	ST250-297	SV250-7LP3	SV250-7LP2
Form Factor	JEDEC MO-297	JEDEC MO-297	SATA Disk Module	SATA Disk Module
Interface	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	120GB~1920GB	128GB~2TB	120GB~480GB	120GB~480GB
Max. Sequential R/W (MB/sec.)	565/505	560/515	560/480	560/480
Max. Random R/W (IOPS)	98K/74K	51K/66K	53K/68K	53K/68K
External DRAM Buffer	Yes	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C



Model	SH250-7LP3	SH250-7LP2	SH250-7LP2/90D
Form Factor	SATA Disk Module	SATA Disk Module	SATA Disk Module
Interface	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)
NAND Flash Type	3D TLC	3D TLC	3D TLC
Capacity	40GB~160GB	40GB~160GB	10GB~40GB
Max. Sequential R/W (MB/sec.)	555/490	555/490	310/305
Max. Random R/W (IOPS)	54K/65K	54K/65K	29K/69K
External DRAM Buffer	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

SATA MO-300

Features

- **JEDEC MO-300 Standard Compliance** - Ensures smooth integration with existing systems
- **Global Wear-leveling and Block Management** - Ensure having lower erase counts to extend SSD lifespan.
- **Built-in ATA Secure Erase and S.M.A.R.T. Functions** - Restore and manage the drives.
- **TRIM Support** - Improves compatibility, endurance, and performance.




Model	SV240-300	SV250-300	SH250-300	ST250-300
Form Factor	JEDEC MO-300	JEDEC MO-300	JEDEC MO-300	JEDEC MO-300
Interface	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	120GB~1920GB	120GB~1920GB	40GB~640GB	64GB~2TB
Max. Sequential R/W (MB/sec.)	565/505	560/470	550/485	560/515
Max. Random R/W (IOPS)	98K/77K	52K/68K	56K/63K	52K/67K
External DRAM Buffer	Yes	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C CET: -25°C ~ 85°C




Model	SV25P-300	SH25P-300	SV250-300B	SH250-300B
Form Factor	JEDEC MO-300	JEDEC MO-300	JEDEC MO-300B	JEDEC MO-300B
Interface	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	120GB~1920GB	40GB~640GB	120GB~960GB	40GB~320GB
Max. Sequential R/W (MB/sec.)	560/515	560/510	560/470	560/485
Max. Random R/W (IOPS)	55K/71K	57K/69K	50K/68K	50K/63K
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

Industrial CFast Card

Features

- **Global Wear-leveling and Block Management** - Ensure having lower erase counts to extend SSD lifespan.
- **Built-in ATA Secure Erase and S.M.A.R.T. Functions** - Restore and manage the drives.
- **Intelligent Power Failure Recovery** - Ensures data integrity
- **TRIM Support** - Improves compatibility, endurance, and performance.

Model	SV250-CFast	SH250-CFast	SV25P-CFast	SH25P-CFast
Form Factor	CFast	CFast	CFast	CFast
Interface	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)	SATA 3.2 (6Gb/s)
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	120GB~960GB	40GB~320GB	120GB~960GB	40GB~320GB
Max. Sequential R/W (MB/sec.)	560/470	550/485	560/505	560/505
Max. Random R/W (IOPS)	50K/68K	55K/63K	56K/71K	57K/69K
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

Industrial SD Card

Features

- **S.M.A.R.T. Support** - Self-monitoring system to monitor SSD status.
- **Global Wear-leveling and Block Management** - Ensure having lower erase counts to extend SSD lifespan.
- **Auto Standby and Sleep Mode Support** - Save power consumption.
- **Low Power Consumption (Optional)** - Saves more power for your device.

Model	SD-WORM	Industrial SD H1-M	Industrial SD H1-SL
Form Factor	SD	SD	SD
Interface	SD 6.1	SD 3.0	SD 3.0
NAND Flash Type	MLC	MLC	MLC
Capacity	8GB~128GB	4GB~128GB	4GB~64GB
Max. Sequential R/W (MB/sec.)	75/65	43/30	90/80
Max. Random R/W (IOPS)	-	-	-
External DRAM Buffer	No	No	No
Operating Temperature (°C)	STD: -25°C ~ 85°C	STD: -25°C ~ 85°C WT: -40°C ~ 85°C	STD: -25°C ~ 85°C WT: -40°C ~ 85°C

Model	Industrial SD R1-M	Industrial SD R1	Industrial SD Card
Form Factor	SD	SD	SD
Interface	SD 3.0	SD 3.0	SD 2.0
NAND Flash Type	MLC	SLC	SLC
Capacity	SDHC: 8GB~16GB	SD: 1GB~2GB SDHC: 4GB~16GB	SD: 256MB~2GB SDHC: 4GB~32GB
Max. Sequential R/W (MB/sec.)	90/25	43/41	23/17
Max. Random R/W (IOPS)	1400	-	-
External DRAM Buffer	No	No	No
Operating Temperature (°C)	STD: -25°C ~ 85°C WT: -40°C ~ 85°C	STD: -25°C ~ 85°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

Industrial microSD Card

Features

- **S.M.A.R.T. Support** - Self-monitoring system to monitor SSD status.
- **Global Wear-leveling and Block Management** - Ensure having lower erase counts to extend SSD lifespan.
- **Low Power Consumption (Optional)** - Saves more power for your device.
- **Extended Temperature Support** - Ensures reliability under temperature changes.

Model	MSD-WORM	CV120-MSD	CH120-MSD
Form Factor	microSD	microSD	microSD
Interface	SD 6.1	SD 6.1	SD 6.1
NAND Flash Type	MLC	3D TLC	3D TLC
Capacity	8GB~128GB	64GB~512GB	16GB~128GB
Max. Sequential R/W (MB/sec.)	70/65	90/85	90/80
Max. Random R/W (IOPS)	-	1900	1900
External DRAM Buffer	No	No	No
Operating Temperature (°C)	STD: -25°C ~ 85°C	STD: -25°C ~ 85°C WT: -40°C ~ 85°C	STD: -25°C ~ 85°C WT: -40°C ~ 85°C

Model	CH210-MSD	Industrial microSD H1-M	Industrial microSD R1
Form Factor	microSD	microSD	microSD
Interface	SD 5.0	SD 3.0	SD 3.0
NAND Flash Type	3D TLC	MLC	SLC
Capacity	16GB~128GB	4GB~128GB	SD: 1GB~2GB SDHC: 4GB~8GB
Max. Sequential R/W (MB/sec.)	90/70	90/75	34/28
Max. Random R/W (IOPS)	1500	-	-
External DRAM Buffer	No	No	No
Operating Temperature (°C)	STD: -25°C ~ 85°C	STD: -25°C ~ 85°C WT: -40°C ~ 85°C	STD: -25°C ~ 85°C WT: -40°C ~ 85°C

Industrial USB Drive

Features

- **Power Saving Implemented** - Reduces energy consumption for longer-lasting performance.
- **Advanced Wear-leveling Algorithms** - Increases drive lifespan by preventing early wear.
- **Optional Industrial Temp. Range -40°C to 85°C** - Operates reliably in extreme temperatures.
- **Support Page Mapping** - Improves data management and storage efficiency.

Model	UT130-UFD9	UV110-UFD1	UV110-UFD5	UT110-UFD5
Form Factor	USB Flash Drive	USB Flash Drive	USB Flash Drive	USB Flash Drive
Interface	USB 3.2 Gen2 x1	USB 3.2 Gen1	USB 3.2 Gen1	USB 3.2 Gen1
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	128GB~1TB	128GB~512GB	128GB~256GB	64GB~256GB
Max. Sequential R/W (MB/sec.)	950/950	275/190	275/190	275/190
Max. Random R/W (IOPS)	62K/70K	3000/1000	3000/1000	3000/1000
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C

Model	UV110-UFD7	UT110-UFD2	UH110-UFD1	UH110-UFD4
Form Factor	USB Flash Drive	USB Flash Drive	USB Flash Drive	USB Flash Drive
Interface	USB 3.2 Gen1	USB 3.2 Gen1	USB 3.2 Gen1	USB 3.2 Gen1
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	128GB~256GB	64GB	32GB~64GB	4GB~8GB
Max. Sequential R/W (MB/sec.)	275/190	270/85	280/190	265/50
Max. Random R/W (IOPS)	3000/1000	2700/500	3000/1500	3300/1100
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

Industrial USB Disk Module

Features

- **Linux / Windows Support** - Compatible with major operating systems.
- **Shock Resistance, Anti-vibration and Low Power Consumption** - Ensure system stability.
- **Support Page Mapping** - Improves data management and storage efficiency.
- **Lock Switch Design for Write-protection (Optional)** - Prevents unauthorized data modifications.



Model	UV110-UFM1	UV110-UFM2	UV110-UFM3	UT110-UFM1
Form Factor	USB Disk Module	USB Disk Module	USB Disk Module	USB Disk Module
Interface	USB 2.0	USB 2.0	USB 2.0	USB 2.0
NAND Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Capacity	128GB~256GB	128GB~256GB	128GB~256GB	64GB~256GB
Max. Sequential R/W (MB/sec.)	37/31	37/31	37/31	40/30
Max. Random R/W (IOPS)	1200/400	1200/400	1200/400	1300/400
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C

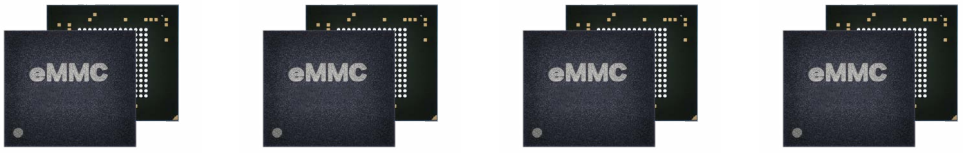


Model	UH110-UFM1	UH110-UFM2	UH110-UFM3
Form Factor	USB Disk Module	USB Disk Module	USB Disk Module
Interface	USB 2.0	USB 2.0	USB 2.0
NAND Flash Type	3D TLC	3D TLC	3D TLC
Capacity	32GB~64GB	32GB~64GB	32GB~64GB
Max. Sequential R/W (MB/sec.)	37/32	37/32	37/32
Max. Random R/W (IOPS)	1200/400	1200/400	1200/400
External DRAM Buffer	No	No	No
Operating Temperature (°C)	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C	STD: 0°C ~ 70°C WT: -40°C ~ 85°C

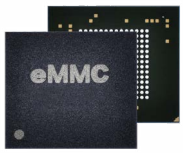
eMMC

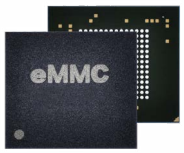
Features

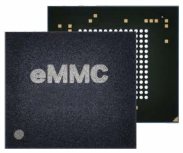
- **Embedded Design Flexibility** - Provides reliable SSD for various applications.
- **Low Power Consumption** - Saves more power for your device.
- **Extreme Temperature Adaptability** - Reliable performance under temperature changes.

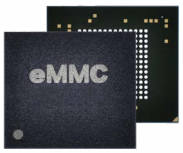


Model	EM110-eMMC	EV130-eMMC	EV150-eMMC	EH150-eMMC
Form Factor	153 Ball FBGA	153 Ball FBGA	153 Ball FBGA	153 Ball FBGA
Interface	eMMC5.1 HS400	eMMC5.1 HS400	eMMC5.1 HS400	eMMC5.1 HS400
NAND Flash Type	MLC	TLC	TLC	SLC-liteX
Capacity	8GB~16GB	32GB	64GB~128GB	16GB~32GB
Max. Sequential R/W (MB/sec.)	225/140	260/110	320/245	320/245
Max. Random R/W (IOPS)	-	-	-	-
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: -40°C ~ 85°C	STD: -40°C ~ 85°C	STD: -40°C ~ 85°C	STD: -40°C ~ 85°C









Model	EM120-eMMC	ET130-eMMC	ET140-eMMC	ET150-eMMC
Form Factor	153 Ball FBGA	153 Ball FBGA	153 Ball FBGA	153 Ball FBGA
Interface	eMMC5.1 HS400	eMMC5.1 HS400	eMMC5.1 HS400	eMMC5.1 HS400
NAND Flash Type	MLC	TLC	TLC	TLC
Capacity	8GB	16GB~32GB	16GB~32GB	64GB~128GB
Max. Sequential R/W (MB/sec.)	280/105	315/195	300/130	320/280
Max. Random R/W (IOPS)	-	-	-	-
External DRAM Buffer	No	No	No	No
Operating Temperature (°C)	STD: -25°C ~ 85°C	STD: -25°C ~ 85°C	STD: -25°C ~ 85°C	STD: -25°C ~ 85°C

Embedded

CUDIMM (Clocked Unbuffered DIMM)/ UDIMM (Unbuffered DIMM)

Features

- **High-quality Original DRAM ICs** - Deliver enhanced and stable performance.
- **Client Clock Driver (CKD) and Transient Voltage Suppressors (TVS) Diode** - Ensure signal integrity and enhance module reliability.
- **Integrated Power Management IC (PMIC, 5V) on DIMM** - Efficiently regulates system power load, ensuring stable and reliable power delivery.
- **On-die ECC Mechanism** - Embedded within each DRAM chip to correct single-bit errors and improve reliability.




Model Name	DDR5 CUDIMM	DDR5 UDIMM	DDR4 UDIMM	DDR3 UDIMM
Module Type	CUDIMM	UDIMM	UDIMM	UDIMM
Memory Technology	DDR5	DDR5	DDR4	DDR3
Speed	6400	4800/5600	2133/2400/2666/ 2933/3200	1066/1333/1600/ 1866
Density	8GB/16GB/32GB/ 48GB/64GB	8GB/16GB/32GB/ 48GB	2GB/4GB/8GB/ 16GB/32GB	1GB/2GB/4GB/ 8GB/16GB
Voltage	1.1v	1.1v	1.2v	1.5v/1.35v
Pin Count	288-Pin	288-Pin	288-Pin	240-Pin
Width	64-Bit	64-Bit	64-Bit	64-Bit
PCB Height	1.23"	1.23"	1.23"	1.18"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	Yes	Yes	-	-

Embedded

CSODIMM (Clocked SODIMM) / SODIMM (Small Outline DIMM)

Features

- **High-quality Original DRAM ICs** - Deliver enhanced and stable performance.
- **Client Clock Driver (CKD) and Transient Voltage Suppressors (TVS) Diode** - Ensure signal integrity and enhance module reliability.
- **Integrated Power Management IC (PMIC, 5V) on DIMM** - Efficiently regulates system power load, ensuring stable and reliable power delivery.
- **On-die ECC Mechanism** - Embedded within each DRAM chip to correct single-bit errors and improve reliability.




Model Name	DDR5 CSODIMM	DDR5 SODIMM	DDR4 SODIMM	DDR3 SODIMM
Module Type	CSODIMM	SODIMM	SODIMM	SODIMM
Memory Technology	DDR5	DDR5	DDR4	DDR3
Speed	6400	4800/5600	2133/2400/2666/ 2933/3200	1066/1333/1600/ 1866
Density	8GB/16GB/32GB/ 48GB/64GB	8GB/16GB/32GB/ 48GB	2GB/4GB/8GB/ 16GB/32GB	1GB/2GB/4GB/ 8GB/16GB
Voltage	1.1v	1.1v	1.2v	1.5v/1.35v
Pin Count	262-Pin	262-Pin	260-Pin	204-Pin
Width	64-Bit	64-Bit	64-Bit	64-Bit
PCB Height	1.18"	1.18"	1.18"	1.18"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	Yes	Yes	-	-

Server/Workstation

RDIMM (ECC Registered DIMM)

Features

- **Integrated Power Management IC (PMIC, 12V) on DIMM** - Efficiently regulates system power load, ensuring stable and reliable power delivery.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **Additional RCD (Register Clock Drivers)** - Enhances overall system stability, especially under heavy workloads.
- **30µ Gold-plated PCB** - Enhances data transmission reliability and resistance to environmental hazards.

Model Name	DDR5 RDIMM	DDR4 RDIMM
Module Type	RDIMM	RDIMM
Memory Technology	DDR5	DDR4
Speed	4800/5600/6400	2133/2400/2666/2933/3200
Density	16GB/32GB/64GB/128GB	4G/8G/16G/32G/64G
Voltage	1.1v	1.2v
Pin Count	288-Pin	288-Pin
Width	80-Bit	72-Bit
PCB Height	1.23"	1.23"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	Yes	-

Server/Workstation

SORDIMM (Small Outline Registered DIMM)

Features

- **High-quality Original DRAM ICs** - Deliver enhanced and stable performance.
- **Additional RCD (Register Clock Drivers)** - Enhances overall system stability, especially under heavy workloads.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **Built-in Thermal Sensor** - Continuously monitors module temperature to prevent overheating and ensure optimal performance.

Model Name	DDR4 SORDIMM
Module Type	SORDIMM
Memory Technology	DDR4
Speed	2133/2400/2666
Density	4GB/8GB/16GB
Voltage	1.2v
Pin Count	260-Pin
Width	72-Bit
PCB Height	0.738"/1.181"
Operating Temperature (°C)	TC=0°C to 85°C
Fully Lead-free Resistor	-

Server/Workstation

ECC CUDIMM (ECC Clocked Unbuffered DIMM)/ECC UDIMM (ECC Unbuffered DIMM)

Features

- **Client Clock Driver (CKD) and Transient Voltage Suppressors (TVS) Diode** - Ensure signal integrity and enhance module reliability.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **On-die ECC Mechanism** - Embedded within each DRAM chip to correct single-bit errors and improve reliability.
- **Built-in Thermal Sensor** - Continuously monitors module temperature to prevent overheating and ensure optimal performance.

Model Name	DDR5 ECC CUDIMM	DDR5 ECC UDIMM
Module Type	ECC CUDIMM	ECC UDIMM
Memory Technology	DDR5	DDR5
Speed	6400	4800/5600
Density	16GB/32GB/48GB/64GB	16GB/32GB/48GB
Voltage	1.1v	1.1v
Pin Count	288-Pin	288-Pin
Width	72-Bit	72-Bit
PCB Height	1.23"	1.23"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	Yes	Yes

Model Name	DDR4 ECC UDIMM	DDR3 ECC UDIMM
Module Type	ECC UDIMM	ECC UDIMM
Memory Technology	DDR4	DDR3
Speed	2133/2400/2666/2933/3200	1066/1333/1600/1866
Density	4GB/8GB/16GB/32GB	2GB/4GB/8GB/16GB
Voltage	1.2v	1.5v/1.35v
Pin Count	288-Pin	240-Pin
Width	72-Bit	72-Bit
PCB Height	1.23"	1.18"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	-	-

Server/Workstation

ECC CSODIMM (ECC Clocked SODIMM)/ECC SODIMM

Features

- **Client Clock Driver (CKD) and Transient Voltage Suppressors (TVS) Diode** - Safeguard signal integrity and enhance module reliability.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **On-die ECC Mechanism** - Embedded within each DRAM chip to correct single-bit errors and improve reliability.
- **Built-in Thermal Sensor** - Continuously monitors module temperature to prevent overheating and ensure optimal performance.

Model Name	DDR5 ECC CSODIMM	DDR5 ECC SODIMM
Module Type	ECC CSODIMM	ECC SODIMM
Memory Technology	DDR5	DDR5
Speed	6400	4800/5600
Density	16GB/32GB/48GB/64GB	16GB/32GB/48GB
Voltage	1.1v	1.1v
Pin Count	262-Pin	262-Pin
Width	72-Bit	72-Bit
PCB Height	1.18"	1.18"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	Yes	Yes

Model Name	DDR4 ECC SODIMM	DDR3 ECC SODIMM
Module Type	ECC SODIMM	ECC SODIMM
Memory Technology	DDR4	DDR3
Speed	2133/2400/2666/2933/3200	1066/1333/1600/1866
Density	4GB/8GB/16GB/32GB	2GB/4GB/8GB/16GB
Voltage	1.2v	1.5v/1.35v
Pin Count	260-Pin	204-Pin
Width	72-Bit	72-Bit
PCB Height	1.18"	1.18"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	-	-

Server/Workstation

VLP Mini RDIMM / VLP Mini ECC UDIMM

Features

- **Additional RCD (Register Clock Drivers)** - Enhances overall system stability, especially under heavy workloads.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **Built-in Thermal Sensor** - Continuously monitors module temperature to prevent overheating and ensure optimal performance.
- **Compact 80mm Length** - Ideal for space-constrained embedded systems.

Model Name	DDR4 VLP Mini RDIMM	DDR4 VLP Mini ECC UDIMM
Module Type	VLP Mini RDIMM	VLP Mini ECC UDIMM
Memory Technology	DDR4	DDR4
Speed	2133/2400/2666	2133/2400/2666
Density	4GB/8GB/16GB	4GB/8GB/16GB
Voltage	1.2v	1.2v
Pin Count	288-Pin	288-Pin
Width	72-Bit	72-Bit
PCB Height	0.738"	0.738"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	-	-

VLP Series

VLP UDIMM (Very Low Profile Unbuffered DIMM)

Features

- **Very Low Profile (VLP) Design** - Saves up to 40% of system space, making it ideal for compact systems.
- **Improved Thermal Management** - VLP design enhances airflow and thermal efficiency, helping to reduce the risk of overheating in tight spaces.
- **Very Low Profile (0.72–0.738 inches)** - Ideal for space-constrained embedded systems.

Model Name	DDR5 VLP UDIMM	DDR4 VLP UDIMM
Module Type	VLP UDIMM	VLP UDIMM
Memory Technology	DDR5	DDR4
Speed	4800/5600	2133/2400/2666/2933/3200
Density	16GB / 32GB	4GB/8GB/16GB/32GB
Voltage	1.1v	1.2v
Pin Count	288-Pin	288-Pin
Width	64-Bit	64-Bit
PCB Height	0.738"	0.738"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	Yes	-

VLP Series

VLP SODIMM / VLP ECC SODIMM

Features

- **Improved Thermal Management** - VLP design enhances airflow and thermal efficiency, helping to reduce the risk of overheating in tight spaces.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **Very Low Profile (0.7–0.709 inches)** - Saves up to 40% of system space, ideal for space-constrained embedded systems.

Model Name	DDR4 VLP SODIMM	DDR4 VLP ECC SODIMM
Module Type	VLP SODIMM	VLP ECC SODIMM
Memory Technology	DDR4	DDR4
Speed	2133/2400/2666/2933/3200	2133/2400/2666/2933/3200
Density	4GB/8GB	4GB/8GB
Voltage	1.2V	1.2V
Pin Count	260-Pin	260-Pin
Width	64-Bit	72-Bit
PCB Height	0.71"	0.7"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	-	-

VLP Series

VLP RDIMM (Very Low Profile Registered DIMM)

Features

- **Improved Thermal Management** - VLP design enhances airflow and thermal efficiency, helping to reduce the risk of overheating in tight spaces.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **Additional RCD (Register Clock Drivers)** - Enhances overall system stability, especially under heavy workloads.
- **Very Low Profile (0.738 inches)** - Saves up to 40% of system space, ideal for space-constrained embedded systems requiring high stability, such as blade servers, 1U rack servers.

Model Name	DDR4 VLP RDIMM
Module Type	VLP RDIMM
Memory Technology	DDR4
Speed	2133/2400/2666/2933/3200
Density	4GB/8GB/16GB/32GB
Voltage	1.2v
Pin Count	288-Pin
Width	72-Bit
PCB Height	0.738"
Operating Temperature (°C)	TC=0°C to 85°C
Fully Lead-free Resistor	-

VLP Series

VLP ECC UDIMM (Very Low Profile ECC Unbuffered DIMM)

Features

- **Very Low Profile (VLP) Design** - Saves up to 40% of system space, making it ideal for compact systems.
- **Improved Thermal Management** - VLP design enhances airflow and thermal efficiency, helping to reduce the risk of overheating in tight spaces.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **Very Low Profile (0.738 inches)** - Ideal for space-constrained embedded systems requiring high stability, such as servers and workstations.

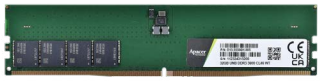
Model Name	DDR5 VLP ECC UDIMM	DDR4 VLP ECC UDIMM
Module Type	VLP ECC UDIMM	VLP ECC UDIMM
Memory Technology	DDR5	DDR4
Speed	4800/5600	2133/2400/2666/2933/3200
Density	16GB/32GB	4G/8G/16G/32G
Voltage	1.1v	1.2V
Pin Count	288-Pin	288-Pin
Width	72-Bit	72-Bit
PCB Height	0.738"	0.738"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	Yes	-

Wide Temperature

Wide Temp. UDIMM

Features

- **Wide Operating Temperature Range (-40°C to 85°C)** - Ensures stable system operation in extreme environments.
- **Equipped with Original Industrial-temperature DRAM ICs** - Guarantees reliable operation in harsh environments.
- **30µ Gold-plated PCB** - Enhances oxidation resistance and ensures stable signal transmission.
- **Designed for Extreme Environment Applications** - Ideal for industrial, aeronautical, and vehicle systems that operate in harsh conditions.



Model Name	DDR5 Wide Temp. UDIMM	DDR4 Wide Temp. UDIMM
Module Type	Wide Temperature UDIMM	Wide Temperature UDIMM
Memory Technology	DDR5	DDR4
Speed	4800/5600	2133/2400/2666/2933/3200
Density	8GB/16GB/32GB	4GB/8GB/16GB/32GB
Voltage	1.1v	1.2v
Pin Count	288-Pin	288-Pin
Width	64-Bit	64-Bit
PCB Height	1.23"	1.23"
Operating Temperature (°C)	TC=-40°C to 85°C	TC=-40°C to 85°C
Fully Lead-free Resistor	Yes	-

Model Name	DDR3 Wide Temp. UDIMM
Module Type	Wide Temperature UDIMM
Memory Technology	DDR3
Speed	1066/1333/1600
Density	2GB/4GB/8GB
Voltage	1.5v/1.35v
Pin Count	240-Pin
Width	64-Bit
PCB Height	1.18"
Operating Temperature (°C)	TC=-40°C to 85°C
Fully Lead-free Resistor	-

Wide Temperature

Wide Temp. SODIMM

Features

- **Wide Operating Temperature Range (-40°C to 85°C)** - Ensures stable system operation in extreme environments.
- **Equipped with Original Industrial-temperature DRAM ICs** - Guarantees reliable operation in harsh environments.
- **30µ Gold-plated PCB** - Enhances oxidation resistance and ensures stable signal transmission.
- **Designed for Extreme Environment Applications** - Ideal for industrial, aeronautical, and vehicle systems that operate in harsh conditions.

Model Name	DDR5 Wide Temp. SODIMM	DDR4 Wide Temp. SODIMM
Module Type	Wide Temperature SODIMM	Wide Temperature SODIMM
Memory Technology	DDR5	DDR4
Speed	4800/5600	2133/2400/2666/2933/3200
Density	8GB/16GB/32GB	4GB/8GB/16GB/32GB
Voltage	1.1v	1.2v
Pin Count	262-Pin	260-Pin
Width	64-Bit	64-Bit
PCB Height	1.18"	1.18
Operating Temperature (°C)	TC=-40°C to 85°C	TC=-40°C to 85°C
Fully Lead-free Resistor	Yes	-

Model Name	DDR3 Wide Temp. SODIMM	DDR2 Wide Temp. SODIMM
Module Type	Wide Temperature SODIMM	Wide Temperature SODIMM
Memory Technology	DDR3	DDR2
Speed	1066/1333/1600	533/667/800
Density	2GB/4GB/8GB	1GB/2GB
Voltage	1.5v/1.35v	1.8v
Pin Count	204-Pin	200-Pin
Width	64-Bit	64-Bit
PCB Height	1.18"	1.18"
Operating Temperature (°C)	TC=-40°C to 85°C	TC=-40°C to 85°C
Fully Lead-free Resistor	-	-

Wide Temperature

Wide Temp. ECC UDIMM

Features

- **Wide Operating Temperature Range (-40°C to 85°C)** - Equipped with Original Industrial-temperature DRAM ICs, ensures stable system operation in extreme environments.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **30µ Gold-plated PCB** - Enhances oxidation resistance and ensures stable signal transmission.
- **Designed for Extreme Environment Applications** - Ideal for industrial, aeronautical, and vehicle systems that operate in harsh conditions.

Model Name	DDR5 Wide Temp. ECC UDIMM	DDR4 Wide Temp. ECC UDIMM
Module Type	Wide Temperature ECC UDIMM	Wide Temperature ECC UDIMM
Memory Technology	DDR5	DDR4
Speed	4800/5600	2133/2400/2666/2933/3200
Density	16GB/32GB	4GB/8GB/16GB/32GB
Voltage	1.1v	1.2v
Pin Count	288-Pin	288-Pin
Width	72-Bit	72-Bit
PCB Height	1.23"	1.23"
Operating Temperature (°C)	TC=-40°C to 85°C	TC=-40°C to 85°C
Fully Lead-free Resistor	Yes	-

Model Name	DDR3 Wide Temp. ECC UDIMM
Module Type	Wide Temperature ECC UDIMM
Memory Technology	DDR3
Speed	1066/1333/1600
Density	2GB/4GB/8GB
Voltage	1.5v/1.35v
Pin Count	240-Pin
Width	72-Bit
PCB Height	1.18"
Operating Temperature (°C)	TC=-40°C to 85°C
Fully Lead-free Resistor	-

Wide Temperature

Wide Temp. ECC SODIMM

Features

- **Wide Operating Temperature Range (-40°C to 85°C)** - Equipped with Original Industrial-temperature DRAM ICs, ensures stable system operation in extreme environments.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **30µ Gold-plated PCB** - Enhances oxidation resistance and ensures stable signal transmission.
- **Designed for Extreme Environment Applications** - Ideal for industrial, aeronautical, and vehicle systems that operate in harsh conditions.

Model Name	DDR5 Wide Temp. ECC SODIMM	DDR4 Wide Temp. ECC SODIMM
Module Type	Wide Temperature ECC SODIMM	Wide Temperature ECC SODIMM
Memory Technology	DDR5	DDR4
Speed	4800/5600	2133/2400/2666/2933/3200
Density	16GB/32GB	4GB/8GB/16GB/32GB
Voltage	1.1v	1.2v
Pin Count	262-Pin	260-Pin
Width	72-Bit	72-Bit
PCB Height	1.18"	1.18"
Operating Temperature (°C)	TC=-40°C to 85°C	TC=-40°C to 85°C
Fully Lead-free Resistor	Yes	-

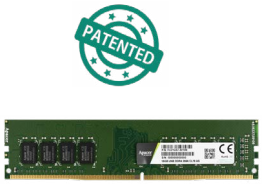
Model Name	DDR3 Wide Temp. ECC SODIMM
Module Type	Wide Temperature ECC SODIMM
Memory Technology	DDR3
Speed	1066/1333/1600
Density	2GB/4GB/8GB
Voltage	1.5v/1.35v
Pin Count	204-Pin
Width	72-Bit
PCB Height	1.18"
Operating Temperature (°C)	TC=-40°C to 85°C
Fully Lead-free Resistor	-

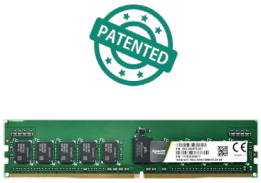
Anti-Sulfuration Series (Apacer Patented)

Anti-Sulfuration Memory Modules

Features

- **The World's First Anti-Sulfuration Memory Modules** - Ensure stable operation in sulfur-containing environments.
- **High-quality Original DRAM ICs** - Deliver enhanced and stable performance.
- **Passed the ASTM B809-95 Anti-Sulfuration Test** - Suitable for equipment operating in highly contaminated environments.





Model Name	DDR5 Anti-Sulfuration UDIMM	DDR5 Anti-Sulfuration SODIMM	DDR5 Anti-Sulfuration RDIMM	DDR4 Anti-Sulfuration RDIMM
Module Type	Anti-Sulfuration UDIMM	Anti-Sulfuration SODIMM	Anti-Sulfuration RDIMM	Anti-Sulfuration RDIMM
Memory Technology	DDR5	DDR5	DDR5	DDR4
Speed	4800/5600	4800/5600	4800/5600	2133/2400/2666/ 2933/3200
Density	8GB/16GB/32GB/48GB	8GB/16GB/32GB/48GB	16GB/32GB	4GB/8GB/16GB/32GB
Voltage	1.1v	1.1v	1.1v	1.2v
Pin Count	288-Pin	262-Pin	288-Pin	288-Pin
Width	64-Bit	64-Bit	80-Bit	72-Bit
PCB Height	1.23"	1.18"	1.23"	1.23"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	Yes	Yes	Yes	-




Model Name	DDR5 Anti-Sulfuration ECC UDIMM	DDR4 Anti-Sulfuration ECC UDIMM	DDR5 Anti-Sulfuration ECC SODIMM	DDR4 Anti-Sulfuration ECC SODIMM
Module Type	Anti-Sulfuration ECC UDIMM	Anti-Sulfuration ECC UDIMM	Anti-Sulfuration ECC SODIMM	Anti-Sulfuration ECC SODIMM
Memory Technology	DDR5	DDR4	DDR5	DDR4
Speed	4800/5600	2133/2400/2666/ 2933/3200	4800/5600	2133/2400/2666/ 2933/3200
Density	16GB/32GB/ 48GB	4GB/8GB/ 16GB/32GB	16GB/32GB	4GB/8GB/ 16GB/32GB
Voltage	1.1v	1.2v	1.1v	1.2v
Pin Count	288-Pin	288-Pin	262-Pin	260-Pin
Width	72-Bit	72-Bit	72-Bit	72-Bit
PCB Height	1.23"	1.23"	1.18"	1.18"
Operating Temperature (°C)	TC=0°C to 85°C	TC=0°C to 85°C	TC=0°C to 85°C	TC=0°C to 85°C
Fully Lead-free Resistor	Yes	-	Yes	-

Rugged Memory Modules

XR-DIMM

Features

- **Rugged 300-pin Connector and Mounting Holes** - Enhance signal transmission stability and securely fasten the memory module to the board, providing superior shock and vibration resistance.
- **Dual Anti-shock and Vibration Certification: RTCA DO-160G / MIL-STD-883K** - Ensures reliable system operation in high-vibration environments.
- **System-level ECC** - Detects and corrects memory errors in real time to ensure data integrity and long-term system stability.
- **Built-in Thermal Sensor** - Continuously monitors module temperature to prevent overheating and maintain optimal performance.

Model Name	DDR4 XR-DIMM
Module Type	XR-DIMM
Memory Technology	DDR4
Speed	2133/2400
Density	8GB/16GB
Voltage	1.2v
Pin Count	300-Pin
Width	72-Bit
PCB Height	1.466"
Operating Temperature (°C)	TC=-40°C to 85°C
Fully Lead-free Resistor	-

Notice :

・All highlighted features are dependent on the memory technology of each individual model.
・All product specifications are subject to change without prior notice.

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