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







Product Lineup - DRAM

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	-	<u>-</u>



Server/Workstation

ECC CSODIMM (ECC Clocked SODIMM)/ECC 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







Product Lineup - DRAM

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	<u>-</u>





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.
- $\boldsymbol{\cdot}$ All product specifications are subject to change without prior notice.

