

# DRAM for Every Design

## Micron® DRAM Module Form Factors Quick Reference Guide

Accelerate your time-to-market with quality DRAM modules rigorously tested for reliability in a wide range of applications. From the cost-sensitive needs of consumer computing to the extreme temperature and performance needs of industrial applications to the exacting specifications of enterprise systems, we have the right solution for your design.



Form Factor	Available <sup>1</sup> Technologies	Available <sup>1</sup> Densities	Bus Width <sup>2</sup>	Data Rate (MT/s)
<b>UDIMM</b> (unbuffered DIMM) ECC- and non-ECC-supported systems with no size constraints	DDR3, DDR4	512MB to 16GB	x64/x72	667 to 2933
<b>SODIMM</b> (small outline DIMM) ECC- and non-ECC-supported, space-sensitive systems	DDR3, DDR4	256MB to 16GB	x64/x72	667 to 2933
<b>RDIMM</b> (registered DIMM) ECC-supported networking, enterprise servers, and workstations	DDR3, DDR4	512MB to 32GB	x72	400 to 2666
<b>SORDIMM</b> (small outline registered DIMM) Small networking form factors and micro servers	DDR3	512MB to 16GB	x72	667 to 1600
<b>LRDIMM</b> (load-reduced DIMM) Highest-density enterprise server and DDR3/DDR4 networking systems	DDR3, DDR4	16GB to 64GB	x72	1333 to 2666
<b>VLP RDIMM</b> (very low profile registered DIMM) Blade servers and networking ATCA height-compatible systems requiring ECC modules	DDR3, DDR4	512MB to 16GB	x72	667 to 2666
<b>VLP UDIMM</b> (very low profile unbuffered DIMM) Blade servers and networking ATCA height-compatible systems requiring ECC modules	DDR3, DDR4	2GB to 16GB	x72	1333 to 2666
<b>Mini-RDIMM</b> (mini registered DIMM) Networking and other size-constrained systems requiring ECC modules	DDR3, DDR4	512MB to 16GB	x72	667 to 2666
<b>Mini-UDIMM</b> (mini unbuffered DIMM) Networking and other size-constrained systems requiring ECC modules	DDR3	2GB to 8GB	x72	1333 to 1600
<b>VLP Mini-RDIMM</b> (very low profile mini registered DIMM) Networking ATCA height-compatible and other size-constrained systems requiring ECC modules	DDR3, DDR4	512MB to 8GB	x72	667 to 2666
<b>VLP Mini-UDIMM</b> (very low profile mini unbuffered DIMM) Networking ATCA height-compatible and other size-constrained systems requiring ECC modules	DDR3, DDR4	2GB to 8GB	x72	1333 to 2666

<sup>1</sup> Available = sampling or in production; <sup>2</sup> All x72 modules are ECC-enabled

Device and Form Factor		Density	Pin Count	Width	Voltage	Data Rate	RoHS	PCB Dimensions
DDR3	UDIMM	1GB to 16GB	240	x64/x72	1.35V/1.5V	1333 to 2133 MT/s	Green	133.35mm L x 30mm H
	SODIMM	1GB to 16GB	204	x64/x72	1.35V /1.5V	1333 to 1866 MT/s	Green	67.6mm L x 30mm H
	RDIMM	1GB to 32GB	240	x72	1.35V/1.5V	1066 to 1866 MT/s	Green	133.35mm L x 30mm H
	SORDIMM	16GB	200	x72	1.35V	1600 MT/s	Green	67.6mm L x 30mm H
	LRDIMM	16GB to 64GB	240	x72	1.35V/1.5V	1333 to 1866 MT/s	Yes, Green	133.35mm L x 30.35mm H
	VLP UDIMM	2GB to 16GB	240	x72	1.35V/1.5V	1333 to 1600 MT/s	Green	133.35mm L x 18.75mm H
	VLP RDIMM	2GB to 16GB	240	x72	1.35V/1.5V	1333 to 1866 MT/s	Green	133.35mm L x 18.75mm H
	Mini-UDIMM	2GB to 8GB	244	x72	1.35V/1.5V	1333 to 1600 MT/s	Green	82mm L x 30mm H
	Mini-RDIMM	8GB	240	x72	1.35V	1333 MT/s	Green	82mm L x 30mm H
	VLP Mini-UDIMM	2GB to 8GB	244	x72	1.35V/1.5V	1333 to 1600 MT/s	Green	82mm L x 17.9mm H
	VLP Mini-RDIMM	4GB to 8GB	244	x72	1.35V	1333 MT/s	Green	82mm L x 17.9mm H
DDR4	UDIMM	2GB to 16GB	288	x64/x72	1.2V	2133 to 2933 MT/s	Green	133.35mm L x 31.25mm H
	SODIMM	2GB to 16GB	260	x64/x72	1.2V	2133 to 2933 MT/s	Green	69.60mm L x 30mm H
	RDIMM	4GB to 32GB	288	x72	1.2V	2133 to 2666 MT/s	Green	133.35mm L x 31.25mm H
	LRDIMM	16GB to 32GB	288	x72	1.2V	2133 to 2666 MT/s	Green	133.35mm L x 31.25mm H
	VLP RDIMM	8GB to 16GB	288	x72	1.2V	2133 to 2666 MT/s	Green	133.35mm L x 18.75mm H
	VLP UDIMM	8GB to 16GB	288	x72	1.2V	2133 to 2666 MT/s	Green	133.35mm L x 18.75mm H
	Mini-RDIMM	8GB to 16GB	288	x72	1.2V	2400 to 2666 MT/s	Green	133.35mm L x 30mm H
	VLP Mini-RDIMM	8GB	288	x73	1.2V	2666 MT/s	Green	133.35mm L x 18.75mm H
	VLP Mini-UDIMM	8GB	288	x74	1.2V	2666 MT/s	Green	133.35mm L x 18.75mm H

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