

Customized Memory Solution

The Mission of CMS: Driving Energy Efficiency and Carbon Reduction

At CMS (Customized Memory Solution), our mission goes beyond manufacturing with renewable energy. Not only introduces RE-Parts with "renewable energy" to reduce 60% carbon footprint in manufacturing, we prioritize understanding customer needs, addressing system level challenges, and continuously innovating to develop products that minimize energy consumption—making these efforts a core part of who we are.

CMS specializes in delivering memory solutions tailored to the unique demands of enterprises. Each solution is carefully designed and optimized for specific applications or environments, ensuring exceptional performance, reliability, and cost-efficiency.

Mobile DRAM and Specialty DRAM

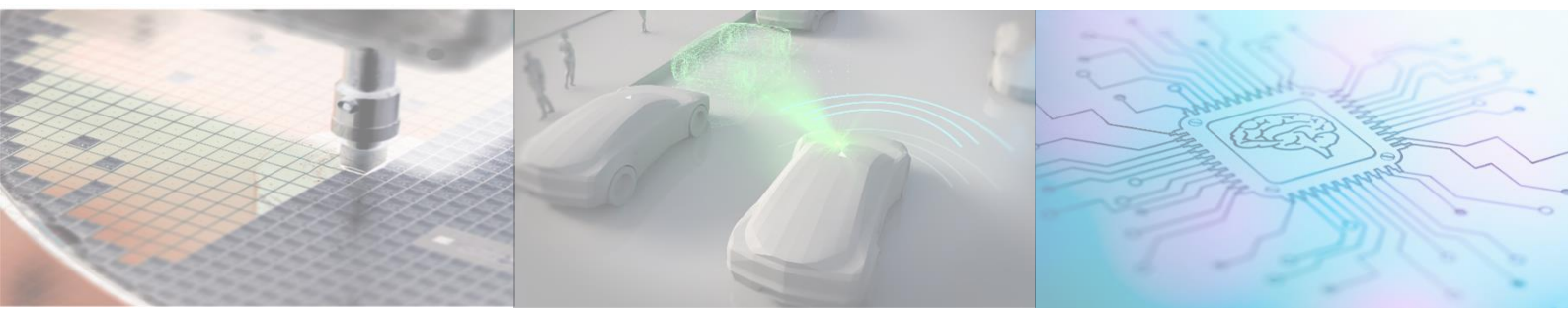
Winbond's Mobile DRAM and Specialty DRAM, focused on low- and mid-density products, deliver high performance and high speed, and are widely adopted by leading brands in the consumer, communication, computer peripheral, industrial, and automotive markets. Complete solutions are available for a wide range of customers. The product portfolio includes HYPERRAM, LPSDR/SDR, LPDDR/DDR, LPDDR2/DDR2, LPDDR3/DDR3, LPDDR4/4X and DDR4, supporting industrial and automotive applications with AEC-Q100, TS16949, ISO9001/14001, and OHSAS18001 certifications.

Winbond leverages advanced manufacturing processes to provide high-quality, high speed, and wide temperature range Known Good Die (KGD) wafers. We also offer electrical simulation, wafer-level speed testing, and other services to enhance product compatibility with SOC for KGD customers. Many customers have leveraged Winbond's expertise to integrate KGD into system-in-package (SiP) solutions. Winbond also provides redistribution layers (RDL) for KGD users, offering additional flexibility for customers who require different pad layouts. This enables cost-effective, space-efficient solutions, overcoming the limitations of standard memory designs.

In addition, Winbond has also launched products manufactured using renewable energy, which not only demonstrates its commitment to sustainable development, but also provides customers with low-carbon solutions, thereby achieving more environmentally friendly applications.

CUBE

Winbond is actively developing small-capacity CUBE memory, which achieves over 1 TB/s bandwidth with a significant reduction in thermal dissipation. With anticipated capacity scaling up to 8 GB per set or even higher, such as 4Hi WoW, based on one reticle size, which can achieve >70GB density and bandwidth 40TB/s, CUBE is positioned as a superior alternative to traditional DRAM architectures for AI-driven edge computing. For more technical information, please contact Winbond marketing.



Winbond DRAM Selection Guide^{1,2}

Product	Density Range	I/O Width	Voltage	Temperature ³	Speed (Mbps)	Package type ⁴
Specialty DRAM						
SDRAM	64Mb to 256Mb	x16	2.5V, 3.3V	C-Temp, I-Temp A-Temp	166/200	TFBGA 54 TSOP II 54 TFBGA 90
DDR	64Mb to 256Mb	x16	2.5V	C-Temp, I-Temp A-Temp	333/400	TSOPII 66
DDR2	128Mb to 2Gb	x8, x16	1.8V	C-Temp, I-Temp A-Temp	667/800/1066	wBGA 84 wBGA 60
DDR3	1Gb to 8Gb	x8, x16	1.5V, 1.35V	C-Temp, I-Temp A-Temp	1866/2133	wBGA 96 wBGA 78
DDR4	4Gb	x8, x16	1.2V	C-Temp, I-Temp	2400/2666/3200	wBGA 96 wBGA 78
Mobile DRAM						
pSRAM	64Mb	x16	1.8V/1.8V	C-Temp, I-Temp	133/166 (SDR) 200/266/333 (DDR)	WFBGA 49
HYPERRAM™	32Mb to 512Mb	x8, x16 ⁵	1.8V/1.8V ⁶	C-Temp, I-Temp A-Temp	400/500 ⁷	TFBGA 24 WFBGA 49 WLCSP
LP SDR	512Mb	x16, x32	1.8V/1.8V	C-Temp, I-Temp	133/166	VFBGA 54 VFBGA 90
LP DDR	256Mb to 1Gb	x16, x32	1.8V/1.8V	C-Temp, I-Temp	333/400	VFBGA 60 VFBGA 90
LP DDR2	512Mb to 2Gb	x16, x32	1.8V/1.2V	C-Temp, I-Temp A-Temp	667/800/1066	VFBGA 134
LP DDR3	512Mb to 1Gb	x16, x32	1.8V/1.2V	C-Temp, I-Temp	1600/1866/2133	VFBGA 178
LP DDR4	1Gb to 8Gb	x16, x32	1.8V/1.1V/1.1V	C-Temp, I-Temp	3200/3733/4266	VFBGA 100 TFBGA 200
LP DDR4X	1Gb to 8Gb	x16, x32	1.8V/1.1V/0.6V	C-Temp, I-Temp	3200/3733/4266	VFBGA 100 TFBGA 200

1. See datasheet for further technical information. This is subject to change without notice.

2. The availability and product development status, please check www.winbond.com.

3. a. For Specialty DRAM, **C-Temp** is SDR/DDR is 0°C~70°C, Other is 0°C~95°C ; **I-Temp**, SDR/DDR is -40°C~85°C, Other is -40°C~95°C; **A-Temp**: AG1 is -40°C ~125°C, AG2 is -40°C ~105°C and AG3 is -40°C ~95°C.

b. SDR/DDR/DDR2 cannot support AG1.

c. For Mobile DRAM, **C-Temp** is -25°C~85°C, -40°C~85°C for **I-Temp** ; **A-Temp**: AG1 is -40°C ~125°C, AG2 is -40°C ~105°C and AG3 is -40°C ~85°C

4. All Winbond products are "Green", Halogen-Free and RoHS compliant packaging.

5. HYPERRAM x16 available from 128Mb to 512Mb.

6. For lower VDD 1.5V, 1.35V or 1.2V HYPERRAM, please contact Winbond marketing.



CMS Website



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