

DRAM Memories Products

Specialty DRAM & Mobile DRAM

Winbond specializes in the design of high performance and low power memory. With a 12-inch fab, we offer a whole series of Specialty DRAM and Mobile DRAM products that target a top-tier clientele and quality-oriented applications. Winbond's products are used extensively in handheld devices, consumer electronics and computer peripherals. Winbond also focus on high-barrier, high-quality applications, such as KGD, automobile and industrial electronics.

Specialty DRAM

- ✓ Support customized KGD solutions including RDL & wide range power domains
- ✓ Special BGA package support on SDR and DDR for portable devices

Mobile DRAM

- ✓ Ultra-Low power by DSR (Deep Self-Refresh) and HSM (Hybrid Sleep Mode)
- ✓ Support x8, x16 and x32 data widths from different product line

Density / Interface	Specialty DRAM					Mobile DRAM							
	SDR / DDR	DDR2		DDR3		pSRAM	HyperRAM™	LP DDR LP SDR	LP DDR2		LP DDR3		LP DDR4/4X
		46/38	25nm	46/38	25nm				46nm	38/25	38nm	25nm	
16Mb	SDR												
32Mb	MP					MP	MP						
64Mb	MP					MP	MP						
128Mb	MP	MP				MP	MP	MP					
256Mb	MP	MP				MP	UD	MP	MP				
512Mb		MP	MP	MP			UD	MP	MP				
1Gb		MP	UD	MP	UD			MP	N	MP		MP	
2Gb		MP			MP					MP		S	X16 MP
4Gb				N	MP						MP		x32 MP x16 UD
8Gb													x32 UD

*MP = Mass production, S= Sample, UD= Under Development, N=Not Recommend for New Design

Winbond DRAM Selection Guide^{1,2}

Product	Density Range	I/O Width	Voltage	Temperature ³	Speed (Mbps)	Package type ⁴
Specialty DRAM						
SDRAM	16Mb to 256Mb	x16, x32	2.5V, 3.3V	C-Temp, I-Temp	133/166/200	VFBGA 60 TFBGA 54 TSOP II 54 TFBGA 90 TSOPII 86
DDR	64Mb to 256Mb	x16	2.5V	C-Temp, I-Temp	333/400/500	TSOPII 66 TFBGA 60
DDR2	128Mb to 2Gb	x8, x16	1.8V	C-Temp, I-Temp	667/800/1066	wBGA 84 wBGA 60
DDR3	512Mb to 4Gb	x8, x16	1.5V, 1.35V	C-Temp, I-Temp	1600/1866/2133	wBGA 96 wBGA 78
Mobile DRAM						
pSRAM	32Mb to 256Mb	x16	1.8V/1.8V	C-Temp, I-Temp	133/166 (SDR) 200/266/333 (DDR)	VFBGA 54 WFBGA 49
HyperRAM™	32Mb to 256Mb	x8	1.8V/1.8V, 3V/3V	C-Temp, I-Temp	333/400	TFBGA 24 VFBGA 49 WLCSP
LP SDR	128Mb to 512Mb	x16, x32	1.8V/1.8V	C-Temp, I-Temp	133/166	VFBGA 54 VFBGA 90
LP DDR	128Mb to 1Gb	x16, x32	1.8V/1.8V	C-Temp, I-Temp	333/400	VFBGA 60 VFBGA 90
LP DDR2	256Mb to 2Gb	x16, x32	1.8V/1.2V	C-Temp, I-Temp	667/800/1066	VFBGA 134
LP DDR3	1Gb to 4Gb	x16, x32 x64 (2Gb)	1.8V/1.2V	C-Temp, I-Temp	1600/1866/2133	VFBGA 178 WFBGA216
LP DDR4	2Gb to 8Gb	x16, x32	1.8V/1.1V/1.1V	C-Temp, I-Temp	3200/3733/4266	VFBGA 200
LP DDR4X	2Gb to 8Gb	x16, x32	1.8V/1.1V/0.6V	C-Temp, I-Temp	3200/3733/4266	VFBGA 200

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

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

3. For Specialty DRAM, C-temp is 0°C~85°C, -40°C~85°C for industrial temp., -40°C~105°C for industrial plus temp. For Mobile DRAM, C-temp is -25°C~85°C, -40°C~85°C for industrial temp..

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

5. Please visit www.winbond.com for additional information or questions about our products.



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