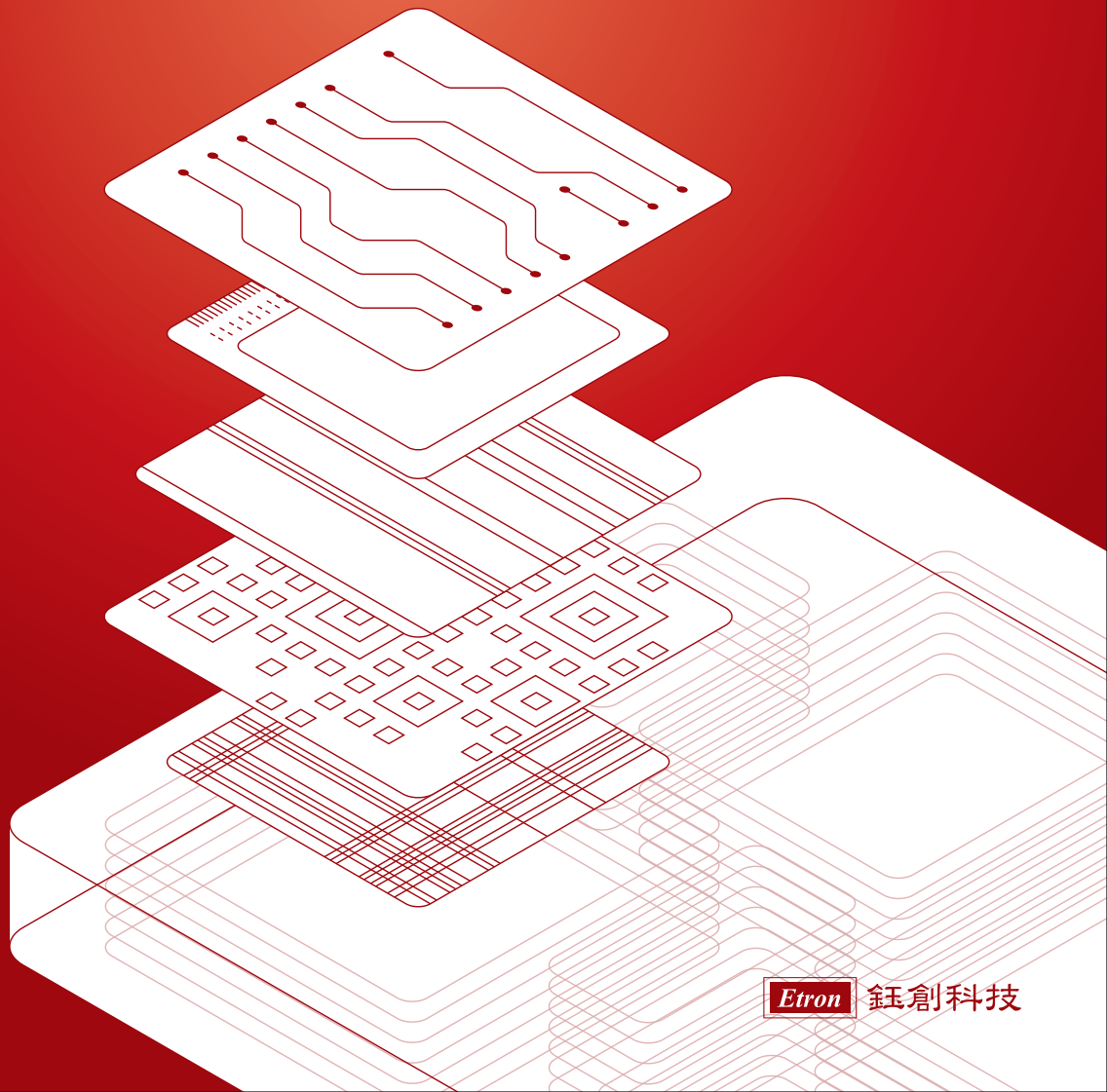


We Specialized in Intelligent Memory and Bridge Chips for Adding Values to Your System

Product Selection Guide





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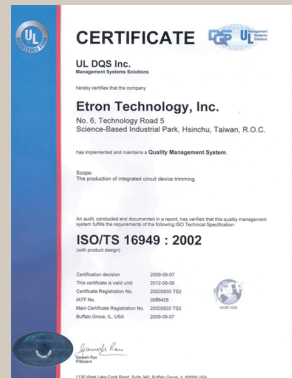
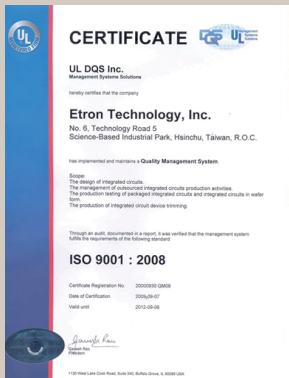
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Awards & Certifications

Etron has been honored with many prestigious awards, including the annual “Best Innovative Product Awards” from the Taiwan National Hsinchu Science Park Bureau through 2001 to 2003 and from worldly known customers as their preferred quality supplier. Etron quality system has been certified by ISO9001/ TS16949/ ISO14001/ OHSAS18001.



Company Overview

Established in 1991, Etron Technology, Inc. (Ticker: 5351) is one of the specialty DRAM leaders in various applications including consumer, communication, computing and car electronics. Since 2001, Etron has been the pioneer in commercializing memory known-good-die (KGD) for stacking in system-in-package (SiP) SoCs with the excellent quality for mobile phone, optical disk drive, display panel, etc., to achieve better system cost and lower system power consumption. With endeavor to better system solutions, Etron has been further advocating the coming era of Heterogeneous Integration (HI) together with the business model of Clustered Virtual Vertical Integration (CVVI). Etron product portfolio has covered broad density range for both KGD SiP and packaged devices such as synchronous DRAMs, Pseudo SRAMs, and Low Power DRAMs.

Product Introduction

KNOWN-GOOD-DIE MEMORY (KGDM)



The emerging demand for system-in-package (SiP) and multi-chip package (MCP) chips has called for Known Good Die solutions with the highest quality. Accumulating years of experience in KGDM technology developments, Etron has been a key partner and supplier with a proven track record of high volume manufacturing (HVM) capability, top quality products, and strong commitment to customer satisfaction for many leading semiconductor and system customers worldwide.

SPECIALTY DRAM

Etron's Dynamic Random Access Memories (DRAMs) are suitable for a broad portfolio of 4C products requiring high memory bandwidth or low-power features. To meet emerging customer needs and environmental requirements, Etron also provides a full lineup of green DRAM products in accordance with the Restriction of Hazardous Substances (RoHS) Directive.

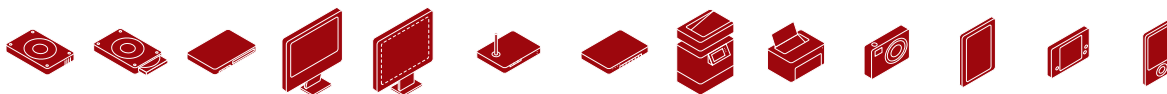
Features:

- Novel Circuit Design
- High Quality and Reliability
- Stringent Wafer-Level-Burn-In Testing
- Optimum Balance between Cost-Effectiveness and Reliability
- Small Form Factor
- High Integration
- Tailored Services

Features:

- DDRII DRAM
- Wide-Bandwidth DDR DRAM
- Enduring SDRAM
- Low Power DDR DRAM
- Low Power SDRAM
- Mobile DDR DRAM
- Mobile SDRAM
- Tailored Services

Applications



	HDD	ODD-IT	ODD-CE	LCD TV	LCD TV Panel	Networking	STB	MFP	Printer	DSC	DPF	PMP	PND
SDR	•	•	•	•	•	•	•	•	•		•	•	
DDR	•	•	•	•	•	•	•	•	•	•	•	•	•
DDR2	•		•	•		•	•	•		•			•
DDR3	•	•	•	•		•	•	•	•	•		•	

Product Selection Table

SDRAM

Density	Organization	Part No.	Speed (ns)	VDD, Interface	Package
16Mb	1Mx16	EM636165GD	4.5, 5, 5.5, 6, 7	3.3V, LVTTTL	Known Good Die Memory
		EM636165TS-XXG	4.5, 5, 5.5, 6, 7		50-pin TSOP2, Pb and Halogen free
		EM636165VE-XXG	5.5, 6, 7		60-ball VFBGA(VE:6.4x10.1x1.0mm), Pb free
		EM6A6165GD	6	2.5V, LVTTTL	Known Good Die Memory
		EM6A6165TS-XXG	7, 10	2.5V, LVCMOS	50-pin TSOP2, Pb and Halogen free
		EM686165GD	7	1.8V, LVCMOS	Known Good Die Memory
		EM686165TS-XXG	7		50-pin 400 mil plastic TSOP2 package
EM686165VE-XXG	7	60-ball VFBGA(VE:6.4x10.1x1.0mm), Pb free			
32Mb	1Mx32	EM637325GD	5.5, 6	3.3V, LVTTTL	Known Good Die Memory
		EM6A7325GD	6, 7	2.5V, LVTTTL	Known Good Die Memory
		EM68732AGD	7.5, 10	1.8V, LVCMOS	Known Good Die Memory
		EM687325GD	5.5, 6		Known Good Die Memory
64Mb	4Mx16	EM638165GD	6, 7	3.3V, LVTTTL	Known Good Die Memory
		EM638165VE-XXG	5, 6, 7		60-ball VFBGA(VE:6.4x10.1x1.0mm), Pb and Halogen free
		EM638165TS-XXG	5, 6, 7		54-pin TSOP2, Pb and Halogen free
		EM6A8165GD	6	2.5V, LVTTTL	Known Good Die Memory
		EM688165GD	6, 7	1.8V, LVCMOS	Known Good Die Memory
		EM688165TS-XXG	6, 7		54-pin TSOP2, Pb and Halogen free
	2Mx32	EM63832BGD	6	3.3V, LVTTTL	Known Good Die Memory
		EM638325BG-XXG	5, 5.5, 6, 7		90-ball LFBGA(BG:11x13x1.4mm), Pb free
		EM638325GD	5.5, 6, 7		Known Good Die Memory
		EM638325TS-XXG	5, 6, 7		86-pin TSOP2, Pb and Halogen free
EM68832BGD	7.5, 10	1.8V, LVCMOS	Known Good Die Memory		
128Mb	8Mx16	EM639165GD	6, 7	3.3V, LVTTTL	Known Good Die Memory
		EM639165TS-XXG	5, 6, 7		54-pin TSOP2, Pb and Halogen free
		EM639165VM-XXG	5, 6, 7		54-ball TFBGA(VM:8x8x1.2mm), Pb and Halogen free
		EM689165GD	6, 7	1.8V, LVCMOS	Known Good Die Memory
		EM689165TS-XXG	6, 7		54-pin TSOP2, Pb and Halogen free
	4Mx32	EM669325BK-XXG	6	3.3V, LVTTTL	90-ball LFBGA(BK:8x13x1.4mm) , Pb free
		EM639325GD	6, 7		Known Good Die Memory
		EM639325TS-XXG	6		86-pin TSOP2, Pb and Halogen free
256Mb	16Mx16	EM63A165GD	6, 7	3.3V, LVTTTL	Known Good Die Memory
		EM63A165TS-XXG	6, 7		54-pin TSOP2, Pb and Halogen free
	8Mx32	EM63A325BK-XXG	7.5		90-ball LFBGA(BK:8x13x1.4mm), Pb free, Stacked die

DDR DRAM

Density	Organization	Part No.	Speed (ns)	V _{DD} , Interface	Package	
16Mb	1Mx16	EM636160GDA	5	2.5V, SSTL_2	Known Good Die Memory	
32Mb	1Mx32	EM637320GDA	5	3.3V, LVCMOS	Known Good Die Memory	
		EM6A7320GDA	5	2.5V, LVCMOS	Known Good Die Memory	
		EM687320GDA	5, 6	1.8V, LVCMOS	Known Good Die Memory	
		EM6A8160GDA	5	2.5V, SSTL_2	Known Good Die Memory	
EM6A8160BN-XXG/H	5	60-Ball TFBGA(BN:8x12x1.2mm), Pb and Halogen free				
64Mb	4Mx16	EM6A8160TSA-XXG	5	1.8V, LVCMOS	66-pin TSOP2, Pb and Halogen free	
		EM688160GDA	6	1.8V, LVCMOS	Known Good Die Memory	
		EM688160TSA-XXG	6	1.8V, LVCMOS	66-pin TSOP2, Pb and Halogen free	
		EM6A9160GDA	5, 6	2.5V, SSTL_2	Known Good Die Memory	
EM6A9160TSA-XXG	4, 5	66-pin TSOP2, Pb and Halogen free				
128Mb	8Mx16	EM6A9160BN-XXH	4, 5	1.8V, LVCMOS	60-ball TFBGA(BN:8x12x1.2mm), Pb and Halogen free	
		EM689160TSA-XXG	6	1.8V, LVCMOS	66-pin TSOP2, Pb and Halogen free	
		EM6A9320GDA	5, 6	2.5, SSTL_2	Known Good Die Memory	
		EM6A9320BIA-XXH	4, 5		144-ball LFBGA(BI:12x12x1.4mm), Pb and Halogen free	
	256Mb	16Mx16	EM6AA160GDB	4, 5	2.5V, SSTL_2	Known Good Die Memory
			EM6AA160TSA-XXG	4, 5		66-pin TSOP2, Pb and Halogen free
EM6AA160TSB-XXG			4, 5	66-pin TSOP2, Pb and Halogen free		
8Mx32		EM6AA320BI-XXMSH	5	144-ball LFBGA(BI:12x12x1.4mm), Pb and Halogen free, Stacked die		
512Mb	32Mx16	EM6AB160GDC	5	2.5V, SSTL_2	Known Good Die Memory	
		EM6AB160TSC-XXG	5, 6		66-Pin TSOP2, 0.65mm pin pitch- Pb and Halogen free	

DDR II DRAM

Density	Organization	Part No.	Speed (ns)	V _{DD} , Interface	Package
128Mb	8Mx16	EM68916CGDA	2.5, 3, 3.75	1.8V, SSTL_18	Known Good Die Memory
		EM68916CWQA-XXH	1.8, 2.5, 3, 3.75		84-Ball Windows FBGA(WQ:8x12.5x1.2mm), Pb free and Halogen free
256Mb	16Mx16	EM68A16CGDA	2.5, 3, 3.75	1.8V, SSTL_18	Known Good Die Memory
		EM68A16CWQA-XXH	2.5, 3, 3.75		84-Ball Windows FBGA(WQ:8x12.5x1.2mm), Pb free and Halogen free
512Mb	32Mx16	EM68B16CGDD	2.5, 3, 3.75	1.8V, SSTL_18	Known Good Die Memory
		EM68B16CWPA-XXH	1.8, 2.5, 3		84-Ball Windows FBGA(WP:10x12.5x1.2mm), Pb free and Halogen free
		EM68B16CWPD-XXH	2.5, 3		84-Ball Windows FBGA(WP:10x12.5x1.2mm), Pb free and Halogen free
1Gb	64Mx16	EM68C16CWQA-XXH	1.8, 2.5, 3	1.8V, SSTL_18	84-Ball Windows FBGA(WQ:8x12.5x1.2mm), Pb free and Halogen free