



Long-Term Support World Class Quality

SRAM • DRAM • Flash



Automotive



Communications



Industrial & Medical

A Broad **DRAM** Solution



DRAM	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb	2Gb	4Gb	8Gb	16Gb
EDO/FP [3.3V]	✓										
SDRAM [3.3V]	✓		✓	✓	✓	✓					
DDR				✓	✓	✓					
DDR2					✓	✓	✓	✓			
DDR3/DDR3L							✓ ECC	✓	✓ ECC	✓ ECC	✓
DDR4									✓	✓	✓
Mobile DRAM	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb	2Gb	4Gb	8Gb	16Gb
Mobile SDRAM [1.8V/2.5V/3.3V]		✓	✓	✓	✓	✓					
LPDDR		✓	✓	✓	✓	✓	✓	✓			
LPDDR2					✓	✓	✓ ^M	✓ ^M	✓ ^M	✓	
LPDDR4 [1.1V], LPDDR4X [0.6V]								✓ ^M ECC	✓ ^M ECC	✓ ^M ECC	✓
Specialty DRAM	288Mb	576Mb	1Gb	2Gb							
RLDRAM 2	✓	✓	✗								
RLDRAM 3		✓	✓	✓							



Complete **SRAM** Solution

Asynchronous SRAM/ Pseudo SRAM	64Kb	256Kb	512Kb	1Mb	2Mb	3Mb	4Mb	8Mb	16Mb	32Mb	64Mb	
5V	✓	✓	✓	✓			✓	✓				
High Speed Asynchronous		✓	✓	✓ ECC	✓ ECC	✓	✓ ECC	✓ ECC	✓ ECC	✓		
Ultra Low Power		✓		✓	✓		✓ ECC	✓ ECC	✓			
Pseudo SRAM								✓	✓	✓	✓	
Low Pin Count	512Kb	1Mb	2Mb	4Mb	8Mb	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb
Serial SRAM	✓	✓	✓	✓								
Serial/QUAD RAM[SPI/QPI]					✓ ECC	✓ ECC	✓	✓	✗	✗		
HyperRAM							✓ ECC	✓ ECC	✓ ECC	✓	✓	✓
OctalRAM							✓ ECC	✓ ECC	✓ ECC	✓	✓	✓
Muxed/Latch Async				✓	✗	✗						
Synchronous SRAM	2Mb	4Mb	8Mb	16Mb	36Mb	72Mb	144Mb					
Standard/No-Wait[ZBT] Synchronous	✓	✓ ECC	✓ ECC	✓	✓	✓						
QUAD/DDRII/QUADP/DDRIIP [Compatible to QDR-II™/ QDR-II+™]				✓	✓	✓	✗					

Industrial & Automotive Temperature Grade, Long Term Support, Lead or RoHS (Lead Free)

STATUS ✓ Production ✗ Sampling ✗ Roadmap ✗ Under Consideration
ECC : On-chip Error Correcting Code is an available option **M** : MCP may be an option (DRAM + Flash)



A Broad NOR Flash and MCP Solution

SPI/QSPI [Serial NOR]	512Kb	1Mb	2Mb	4Mb	8Mb	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb	2Gb
2.5/3V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ECC	✓ ECC	✓ ECC	✗ ECC
1.8V	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓ ECC	✓ ECC	✓ ECC	✗ ECC

1.2V and Wide I/O 1.5V - 3.6V Serial Flash products under development

Twin Quad SPI [2 CE]	256Mb	512Mb	1Gb	2Gb
3V	✗	✓	✗	✗
1.8V	✗	✗	✗	✗

Parallel Flash [NOR]	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb
3V w/ VIO = 1.65-3.6V	✓	✓	✓	✓	✗	✗

xSPI [Octal Flash]	32Mb 64Mb	128Mb	256Mb	512Mb	1Gb	2Gb
3V	✓	✓	✓	✓	✗	✗
1.8V	✓	✓	✓	✓	✗	✗

MCP	128Mb+ 128Mb	128Mb+ 256Mb	256Mb+ 256Mb	256Mb+ 512Mb	512Mb+ 512Mb
OctalRAM + OctalFlash	✓	✓	✓	✗	✗
HyperRAM + OctalFlash	✗	✗	✗	✗	✗

A Broad NAND and Managed NAND Portfolio

SPI NAND	1Gb	2Gb	4Gb	8Gb
3V/1.8V	✓ 1bit ECC	✗ 1bit ECC	✗ 8bit ECC	✗ 8bit ECC

SLC NAND	1Gb	2Gb	4Gb	8Gb	16Gb
3V/1.8V; [x8 & x16]	✓ 1 or 4bit ECC	✓ 1 or 4bit ECC	✓ 1 or 4 or 8bit ECC	✓ 8bit ECC	✗ 8bit ECC

eMMC 5.0/5.1	8GB	16GB	32GB	64GB	128GB
3V/1.8V; [100 & 153 BGA]	✓	✓	✓	✓	✓

UFS 2.1/2.2/3.1	64GB	128GB	256GB
3V/1.8V; [153 BGA]	✗	✗	✗

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