



CYPRESS[®]
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Cypress Roadmap: Flash Memory

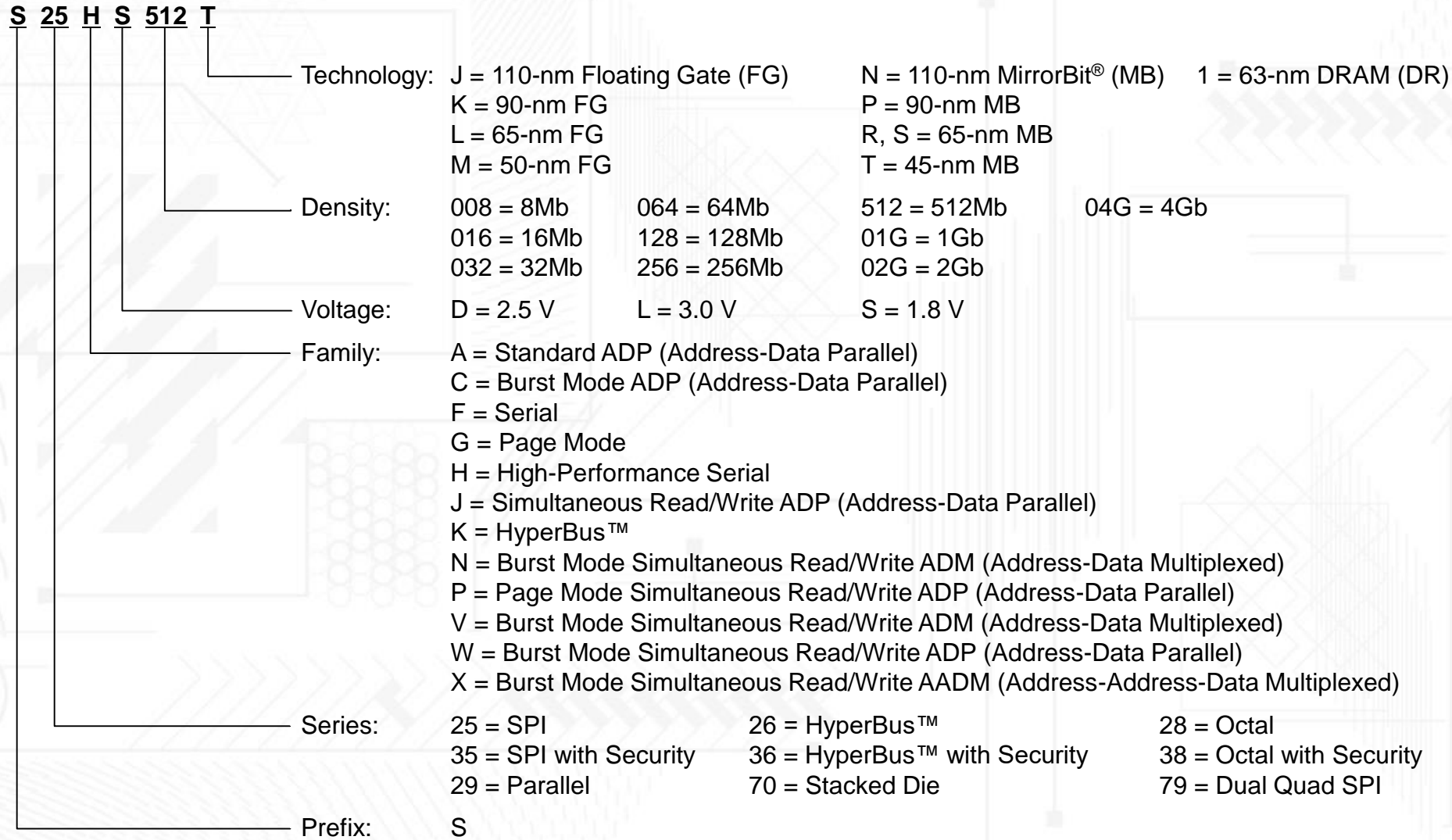
Q2 2019



NOR Flash Memory Family



NOR Flash Memory Family Decoder



NOR Flash Memory Product Portfolio: New Products

Family	Interface	Sector Size	Series	Voltage	Densities	Lead	Tech	2019	2020	2021	2022	2023
Semper™ Flash	QSPI	Hybrid	S25HS-T S25HL-T	1.8 V 3.0 V	256Mb–4Gb	512Mb	45-nm MB	█	█	█	█	█
	HyperBus™ ¹		S26HS-T S26HL-T	1.8 V 3.0 V	256Mb–4Gb	512Mb	45-nm MB	█	█	█	█	█
	Octal ¹		S28HS-T S28HL-T	1.8 V 3.0 V	256Mb–4Gb	512Mb	45-nm MB	█	█	█	█	█
QSPI	QSPI	Hybrid	S25FS-S	1.8 V	64Mb–1Gb	-	65-nm MB	█	█	█	█	█
		Uniform 4KB	S25FL-S	3.0 V	128Mb–1Gb	-	65-nm MB	█	█	█	█	█
			S25FL-L	3.0 V	64–256Mb	-	65-nm FG	█	█	█	█	█
Dual Quad SPI	QSPI	Hybrid	S79FS-S S79FL-S	1.8 V 3.0 V	256Mb–1Gb	-	65-nm MB	█	█	█	█	█
HyperFlash	HyperBus	Hybrid	S26KS-S S26KL-S	3.0 V	128–512Mb	-	65-nm MB	█	█	█	█	█
Parallel	Parallel	Hybrid	S29GL-T	3.0 V	512Mb–2Gb	-	45-nm MB	█	█	█	█	█

¹ JEDEC xSPI Compliant

 Concept
 Samples
 Production
 EOL

x8 Serial Memory Roadmap

Product Family	Density	(Prod) [EOL]	2019				2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
S28HS-T ¹ (1.8 V)	4Gb ³	(TBD)																				
S28HL-T ¹ (3.0 V)	2Gb ³	(TBD)																				
Semper™ Flash with Octal Interface	1Gb	(Q1'20)																				
45-nm MB ²	512Mb	(Q3'19)																				
	256Mb	(Q1'21)																				
S26HS-T ¹ (1.8 V)	4Gb ³	(TBD)																				
S26HL-T ¹ (3.0 V)	2Gb ³	(TBD)																				
Semper Flash with HyperBus™ Interface	1Gb	(Q1'20)																				
45-nm MB ²	512Mb	(Q3'19)																				
	256Mb	(Q1'21)																				
S26KS-S (1.8 V)	512Mb																					
S26KL-S (3.0 V)	256Mb																					
HyperFlash	128Mb																					
65-nm MB ²																						
S79FS-S (1.8 V)	1Gb ⁴																					
Dual Quad SPI	512Mb ⁴	(TBD)																				
65-nm MB ²	256Mb ⁴	(TBD)																				
S79FL-S (3.0 V)	1Gb ⁴																					
Dual Quad SPI	512Mb ⁴																					
65-nm MB ²	256Mb ⁴																					

¹ JEDEC xSPI Compliant

² Hybrid Sector

³ Stacked Die

⁴ S79 Series (stacked die)

Products supported by Longevity Program unless noted



x8 Serial Memory Portfolio

	Dual Quad SPI S79FL-S ^{1,2} 65-nm MB, 3.0 V	HyperFlash S26KL-S ¹ 65-nm MB, 3.0 V	Semper™ Flash ³ S26HL-T ^{1,4} 45-nm MB, 3.0 V	Semper Flash ⁵ S28HL-T ^{1,4} 45-nm MB, 3.0 V	Dual Quad SPI S79FS-S ^{1,2} 65-nm MB, 1.8 V	HyperFlash S26KS-S ¹ 65-nm MB, 1.8 V	Semper Flash ³ S26HS-T ^{1,4} 45-nm MB, 1.8 V	Semper Flash ⁵ S28HS-T ^{1,4} 45-nm MB, 1.8 V
≥256Mb	Density Initial Access/DDR Clock * Temperature Range	Density (S79) SDR Clock / DDR Clock * Temperature Range						
	All parts supported by Longevity Program unless noted							
			4Gb ^{6,7} 80 ns/133 MHz * I, A, V, B, M	4Gb ^{6,7} 80 ns/133 MHz * I, A, V, B, M			4Gb ^{6,7} 80 ns/166 MHz * I, A, V, B, M	4Gb ^{6,7} 80 ns/166 MHz * I, A, V, B, M
			2Gb ^{6,7} 80 ns/133 MHz * I, A, V, B, M	2Gb ^{6,7} 80 ns/133 MHz * I, A, V, B, M			2Gb ^{6,7} 80 ns/166 MHz * I, A, V, B, M	2Gb ^{6,7} 80 ns/166 MHz * I, A, V, B, M
	1Gb 133 MHz/80 MHz * I, A, V, B		1Gb Q120 80 ns/166 MHz * I, A, V, B, M	1Gb Q120 80 ns/166 MHz * I, A, V, B, M	1Gb 133 MHz/102 MHz * I, A, V, B		1Gb Q120 80 ns/200 MHz * I, A, V, B, M	1Gb Q120 80 ns/200 MHz * I, A, V, B, M
512Mb 133 MHz/80 MHz * I, A, V, B	512Mb 96 ns/166 MHz * I, A, V, B, M	512Mb Q319 80 ns/166 MHz * I, A, V, B, M	512Mb Q319 80 ns/166 MHz * I, A, V, B, M	512Mb 133 MHz/80 MHz * I, A, V, B	512Mb 96 ns/166 MHz * I, A, V, B, M	512Mb Q319 80 ns/200 MHz * I, A, V, B, M	512Mb Q319 80 ns/200 MHz * I, A, V, B, M	
256Mb 133 MHz/80 MHz * I, A, V, B	256Mb 96 ns/166 MHz * I, A, V, B, M	Q120 256Mb Q121 80 ns/166 MHz * I, A, V, B, M	Q120 256Mb Q121 80 ns/166 MHz * I, A, V, B, M	256Mb 133 MHz/80 MHz * I, A, V, B	256Mb 96 ns/166 MHz * I, A, V, B, M	Q120 256Mb Q121 80 ns/200 MHz * I, A, V, B, M	Q120 256Mb Q121 80 ns/200 MHz * I, A, V, B, M	
64–128Mb		128Mb 96 ns/166 MHz * I, A, V, B, M				128Mb 96 ns/166 MHz * I, A, V, B, M		

¹ Hybrid Sector

² S79 series (stacked die)

³ With HyperBus™ Interface

⁴ JEDEC xSPI Compliant

⁵ With Octal Interface

⁶ Stacked die

⁷ Contact Sales

* I = Industrial: -40°C to +85°C

A = Automotive, AEC-Q100 Grade 3: -40°C to +85°C

V = Industrial-plus: -40°C to +105°C

B = Automotive, AEC-Q100 Grade 2: -40°C to +105°C

M = Automotive, AEC-Q100 Grade 1: -40°C to +125°C

Status	Concept	Development	Sampling	Production
Availability				
EOL (Last-Time-Ship)				



x4 Serial NOR Flash Memory Roadmap

Product Family	Density	(Prod) [EOL]	2019				2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
S25HS-T (1.8 V) S25HL-T (3.0 V) Semper™ Flash with QSPI Interface 45-nm MB ¹	4Gb ⁴ 2Gb ^{4,5} 1Gb 512Mb 256Mb	(TBD) (Q1'20) (Q1'20) (Q3'19) (Q1'21)	[Roadmap visualization: Blue bars for Q1-2019, Q1-2020; Green bars for Q1-2021, Q1-2022, Q1-2023; Grey bar for Q1-2019]																			
S25FS-S (1.8 V) S25FL-S ² (3.0 V) QSPI 65-nm MB ¹	1Gb ⁶ 512Mb 256Mb 128Mb ⁷ 64Mb ⁸		[Roadmap visualization: Green bars for Q1-2020, Q1-2021, Q1-2022, Q1-2023]																			
S25FL-L (3.0 V) QSPI 65-nm FG ³	256Mb 128Mb 64Mb		[Roadmap visualization: Green bars for Q1-2020, Q1-2021, Q1-2022, Q1-2023]																			
S25FL1-K (3.0 V) QSPI 90-nm FG ³	64Mb 32Mb 16Mb	[Q3'19] [Q3'19] [Q3'19]	[Roadmap visualization: Grey bar for Q1-2019]																			

¹ Uniform Sector

⁴ Stacked die

⁷ S25FL127S & S25FL128S

² Hybrid Sector

⁵ QSPI 3.0V only

⁸ FS-S only

³ VIO 1.8 V to 3.0 V

⁶ S70 Series (stacked die)

Products supported by Longevity Program unless noted



Concept



Samples



Production



EOL - LTB



EOL - LTS



x4 Serial NOR Flash Memory Portfolio

	QSPI S25FL-L ¹ 65-nm FG, 3.0 V	QSPI S25FL-S ² 65-nm MB, 3.0 V	Semper™ Flash ³ S25HL-T ² 45-nm MB, 3.0 V	QSPI S25FS-S ² 65-nm MB, 1.8 V	Semper Flash ³ S25HS-T ² 45-nm MB, 1.8 V
≥256Mb	Density SDR Clock/DDR Clock * Temperature Range All parts supported by Longevity Program unless noted		4Gb⁴ 133 MHz/80 MHz * I, A, V, B, M 2Gb^{4,8} Q120 133 MHz/80 MHz * I, A, V, B, M 1Gb Q120 166 MHz/102 MHz * I, A, V, B, M 512Mb Q319 166 MHz/102 MHz * I, A, V, B, M Q120 256Mb Q121 166 MHz/102 MHz * I, A, V, B, M		4Gb⁴ 133 MHz/80 MHz * I, A, V, B, M 2Gb⁴ 133 MHz/80 MHz * I, A, V, B, M 1Gb Q120 166 MHz/102 MHz * I, A, V, B, M 512Mb Q319 166 MHz/102 MHz * I, A, V, B, N, M Q120 256Mb Q121 166 MHz/102 MHz * I, A, V, B, M
		1Gb⁵ 133 MHz/80 MHz * I, A, V, B, M 512Mb 133 MHz/80 MHz * I, A, V, B, M 256Mb 133 MHz/80 MHz * I, A, V, B, M		1Gb⁵ 133 MHz/80 MHz * I, A, V, B, N, M 512Mb 133 MHz/80 MHz * I, A, V, B, N, M 256Mb 133 MHz/80 MHz * I, A, V, B, M	
64–128Mb	256Mb 133 MHz/66 MHz * I, A, V, B, M 128Mb 133 MHz/66 MHz * I, A, V, B, M 64Mb 108 MHz/54 MHz * I, A, V, B, M	256Mb 133 MHz/80 MHz * I, A, V, B, M 128Mb⁶ 133 MHz/80 MHz * I, A, V, B, M 128Mb⁷ 108 MHz/-- * I, A, V, B		256Mb 133 MHz/80 MHz * I, A, V, B, M 128Mb 133 MHz/80 MHz * I, A, V, B, M 64Mb 133 MHz/80 MHz * I, A, V, B, N, M	

¹ Uniform Sector

⁵ S70 series (stacked die)

* I = Industrial: -40°C to +85°C

² Hybrid Sector

⁶ S25FL128S 133-MHz SDR 80-MHz DDR

A = Automotive, AEC-Q100 Grade 3: -40°C to +85°C

³ With QSPI

⁷ S25FL127S 108-MHz SDR

V = Industrial-plus: -40°C to +105°C

⁴ Stacked die

⁸ Contact Sales

B = Automotive, AEC-Q100 Grade 2: -40°C to +105°C

M = Automotive, AEC-Q100 Grade 1: -40°C to +125°C



Parallel NOR Flash Memory Roadmap

Product Family	Density (Prod) [EOL]	2019				2020				2021				2022				2023			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
S29GL-T ¹ (3.0 V) 45-nm MB	2Gb ³ 1Gb 512Mb	[Production]																			
S29GL-S ¹ (3.0 V) 65-nm MB	2Gb ³ 1Gb 512Mb 256Mb 128Mb 64Mb	[Production]																			
S29GL-P ¹ (3.0 V) 90-nm MB	256Mb 128Mb	[Production]																			
S29GL-N ¹ (3.0 V) 110-nm MB	64Mb 32Mb	[Production]																			
S29PL-J ^{1,2} (3.0 V) 110-nm FG	128Mb 64Mb 32Mb	[Production]																			
S29JL-J ² (3.0 V) 110-nm FG	64Mb 32Mb	[Production]																			
S29AL-J (3.0 V) 110-nm FG	16Mb 8Mb	[Production]																			
S29AS-J (1.8 V) 110-nm FG	16Mb	[Production]																			

¹ Supports Page Mode

² Supports simultaneous read/write operation

³ S70 series (stacked die)

Products supported by
Longevity Program unless noted



Parallel NOR Flash Memory Portfolio

	S29AS-J 110-nm FG, 1.8 V	S29AL-J 110-nm FG, 3.0 V	S29JL-J ¹ 110-nm FG, 3.0 V	S29PL-J ^{1,2} 110-nm FG, 3.0 V	S29GL-N ² 110-nm MB, 3.0 V	S29GL-P ² 90-nm MB, 3.0 V	S29GL-S ² 65-nm MB, 3.0 V	S29GL-T ² 45-nm MB, 3.0 V
≥256Mb	Density Initial/Page Access * Temperature Range All parts supported by Longevity Program unless noted						2Gb³ 110 ns/20 ns * I, A, V, B 1Gb 100 ns/15 ns * I, A, V, B 512Mb 100 ns/15 ns * I, A, V, B	2Gb³ 110 ns/20 ns * I, A, V, B, N 1Gb 100 ns/15 ns * I, A, V, B, N 512Mb 100 ns/15 ns * I, A, V, B, N
						256Mb 90 ns/25 ns * I	256Mb 90 ns/15 ns * I, A, V, B	
64–128Mb				128Mb 60 ns/20 ns * I, A		128Mb 90 ns/25 ns * I	128Mb 90 ns/15 ns * I, A, V, B 64Mb 70 ns/15 ns * I, A, B	
			64Mb 55 ns/-- * I, A	64Mb 55 ns/20 ns * I, A	64Mb 90 ns/25 ns * I, A			
			32Mb 60 ns/-- * I, A	32Mb 55 ns/20 ns * I, A	32Mb 90 ns/25 ns * I, A			
≤32Mb	16Mb 70 ns/-- * I, A	16Mb 55 ns/-- * I, A, N, M 8Mb 55 ns/-- * I, A, N, M						

¹ Supports simultaneous read/write operation
² Supports Page Mode
³ S70 series (stacked die)

* I = Industrial: -40°C to +85°C
 A = Automotive, AEC-Q100 Grade 3: -40°C to +85°C
 V = Industrial-plus: -40°C to +105°C
 B = Automotive, AEC-Q100 Grade 2: -40°C to +105°C
 N = Extended: -40°C to +125°C
 M = Automotive, AEC-Q100 Grade 1: -40°C to +125°C

Status Availability EOL (Last-Time-Ship)

Concept
 Development
 Sampling
 Production

Sampling QQYY
 Production QQYY
 EOL QQYY



Burst NOR Flash Memory Roadmap

Product Family	Density	(Prod) [EOL]	2019				2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
S29WS-P ¹ (1.8 V) 90-nm MB	512Mb 256Mb 128Mb		[Green Bar]																			
S29NS-P ² (1.8 V) 90-nm MB	512Mb		[Green Bar]																			
S29VS-R ³ (1.8 V) 65-nm MB	256Mb 128Mb 64Mb		[Green Bar]																			
S29XS-R ² (1.8 V) 65-nm MB	256Mb 128Mb 64Mb		[Green Bar]																			
S29CD-J ¹ (1.8 V) 110-nm MB	32Mb 16Mb		[Green Bar]																			
S29CL-J ¹ (3.0 V) 110-nm MB	32Mb 16Mb		[Green Bar]																			

¹ Address Data Parallel (ADP) Burst

² Address high, Address low, Data Multiplex (AADM) Burst

³ Address Data Multiplex (ADM) Burst

Products supported by
Longevity Program unless noted



Burst NOR Flash Memory Portfolio

	S29CL-J ¹ 110-nm FG, 3.0 V	S29CD-J ¹ 110-nm FG, 2.5 V	S29XS-R ² 65-nm MB, 1.8 V	S29VS-R ³ 65-nm MB, 1.8 V	S29NS-P ² 90-nm MB, 1.8 V	S29WS-P ¹ 90-nm MB, 1.8 V
≥256Mb	Density Initial Access/SDR Clock * Temp Range	All parts supported by Longevity Program unless noted			512Mb 80 ns/83 MHz * W	512Mb 80 ns/104 MHz * W
64–128Mb			256Mb 80 ns/108 MHz * W, I	256Mb 80 ns/108 MHz * W, I		256Mb 80 ns/104 MHz * W
			128Mb 80 ns/108 MHz * W, I	128Mb 80 ns/108 MHz * W, I		128Mb 80 ns/104 MHz * W
≤32Mb	32Mb 54 ns/75 MHz * I, A, N, M, H, T	32Mb 54 ns/75 MHz * I, A, N, M, H, T	64Mb 80 ns/108 MHz * W, I	64Mb 80 ns/108 MHz * W, I		
	16Mb 54 ns/66 MHz * I, A, N, M, H, T	16Mb 54 ns/66 MHz * I, A, N, M, H, T				

¹ Address Data Parallel (ADP) Burst

² Address high, Address low, Data Multiplex (AADM) Burst

³ Address Data Multiplex (ADM) Burst

* W = Wireless: -25°C to +85°C

I = Industrial: -40°C to +85°C

A = Automotive, AEC-Q100 Grade 3: -40°C to +85°C

N = Extended: -40°C to +125°C

M = Automotive, AEC-Q100 Grade 1: -40°C to +125°C

T = Automotive, AEC-Q100 Grade 0: -40°C to +150°C

Status
Availability
EOL (Last-Time-Ship)

Concept	Development	Sampling	Production





KGD NOR Flash Memory Portfolio¹



	HyperFlash 3.0 V	HyperFlash 1.8 V	Quad SPI 3.0 V	Quad SPI 1.8 V	Parallel 3.0 V
	Density Initial Access/DDR Clock * Temperature Range		Density SDR Clock/DDR Clock * Temperature Range		Density Initial/Page Access * Temperature Range
≥256Mb	All parts supported by Longevity Program unless noted				GL-S 1Gb 100 ns/15 ns * I, V
	KL-S 512Mb 96 ns/100 MHz * I, V, N	KS-S 512Mb 96 ns/166 MHz * I, V, N	FL-S 512Mb 133 MHz/80 MHz * I, V		GL-S 512Mb 100 ns/15 ns * I, V
	KL-S 256Mb 96 ns/100 MHz * I, V, N	Q320 KS-S 256Mb Q420 96 ns /166 MHz * I, V, N, M	FL-L 256Mb 133 MHz/66 MHz * I, V, N	FS-S 256Mb 133 MHz/80 MHz * I, V	GL-S 256Mb 90 ns/15 ns * I, V
64–128Mb	KL-S 128Mb 96 ns/100 MHz * I, V, N	Q420 KS-S 128Mb 96 ns/166 MHz * I, V, N, M	FL-L 128Mb 133 MHz/66 MHz * I, V, N	FS-S 128Mb 133 MHz/80 MHz * I, V	GL-S 128Mb 90 ns / 15 ns * I, V
			FL-L 64Mb 108 MHz/54 MHz * I, V, N	FS-S 64Mb 133 MHz/80 MHz * I, V, N	
<64Mb					AL-J 16Mb 55 ns/-- * I, V, N
					AL-J 8Mb 55 ns/-- * I, V, N


¹ Contact Sales for KGD datasheets


*I = Industrial: -40°C to +85°C
 V = Industrial-plus: -40°C to +105°C
 N = Extended: -40°C to +125°C
 M = Automotive, AEC-Q100 Grade 1: -40°C to +125°C
 All temperature grades are T_J



Status Availability EOL (Last-Time-Ship)

Concept 
 Development 
 Sampling 
 Production 







Flash and RAM Memory MCP



Flash and RAM Memory MCP Decoder

S 71 N S 512 S D

RAM Density:	A = 16Mb	B = 32Mb	C = 64Mb	D = 128Mb	E = 256Mb
Flash Technology:	N = 110-nm MirrorBit (MB)	P = 90-nm MB	R, S = 65-nm MB	T = 45-nm MB	
Flash Density:	032 = 32Mb	128 = 128Mb	512 = 512Mb		
	064 = 64Mb	256 = 256Mb	01G = 1Gb		
Voltage:	L = 3.0 V	S = 1.8 V			
Family:	G = Page Mode H = High-Performance Serial K = HyperFlash N = Burst Mode Simultaneous Read / Write Address-Data Multiplexed (ADM) V = Burst Mode Simultaneous Read / Write Address-Data Multiplexed (ADM) W = Burst Mode Simultaneous Read / Write Address-Data Parallel (ADP) X = Burst Mode Simultaneous Read / Write Address-Address-Data Multiplexed (AADM)				
Series:	71, 98 = NOR Flash + pSRAM 72 = NOR Flash + DRAM				
Prefix:	S				

Flash and RAM Memory MCP Roadmap

Product Family Flash / RAM	Flash / RAM Density	(Prod) [EOL]	2019				2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
S71HS-T (1.8 V) 45-nm Semper™ Flash / HyperRAM™	1Gb/64Mb 512Mb/64Mb	(TBD) (TBD)																				
S71KS-S (1.8 V) 65-nm HyperFlash/ HyperRAM	512Mb/64Mb 256Mb/64Mb 128Mb/64Mb	(TBD) (TBD)																				
S71HL-T (3.0 V) 45-nm Semper Flash / HyperRAM	1Gb/64Mb 512Mb/64Mb	(TBD) (TBD)																				
S71KL-S (3.0 V) 65-nm HyperFlash/ HyperRAM	512Mb/64Mb 256Mb/64Mb 128Mb/64Mb	(TBD)																				
S98GL-N (3.0 V) 110-nm MB/pSRAM	64Mb/32Mb																					
S72XS-R (1.8 V) 65-nm MB/DRAM	256Mb/256Mb																					
S72VS-R (1.8 V) 65-nm MB/DRAM	256Mb/256Mb																					
S71VS-R (1.8 V) 65-nm MB/pSRAM	256Mb/128Mb 256Mb/64Mb 128Mb/64Mb 128Mb/32Mb 64Mb/32Mb																					
S71NS-P (1.8 V) 90-nm MB/pSRAM	512Mb/128Mb																					
S71WS-P (1.8 V) 90-nm MB/pSRAM	256Mb/64Mb																					

Products supported by
Longevity Program unless noted



Flash and RAM Memory MCP Portfolio

	S71WS-P ¹ 90-nm MB, 1.8 V	S71NS-P ² 90-nm MB, 1.8 V	S71VS-R ² 65-nm MB, 1.8 V	S72VS-R ³ 65-nm MB, 1.8 V	S72XS-R ³ 65-nm MB, 1.8 V	S98GL-N ⁴ 110-nm MB, 3.0 V	S71KL-S ⁵ 65-nm MB, 3.0 V	S71HL-T ⁵ 45-nm MB, 3.0 V	S71KS-S ⁵ 65-nm MB, 1.8 V	S71HS-T ⁵ 45-nm MB, 1.8 V
	Flash Density RAM Density * Temperature Range	All parts supported by Longevity Program unless noted								
≥256Mb		512Mb 128Mb * W			256Mb 256Mb ⁶ * I		512Mb 64Mb ⁸ * I, A, V, B	1Gb 64Mb ⁸ * I, A, V, B		1Gb 64Mb ⁸ * I, A, V, B
			256Mb 128Mb * W	256Mb 256Mb * W	256Mb 256Mb ⁷ * W, I			512Mb 64Mb ⁸ * I, A, V, B	512Mb 64Mb ⁸ * I, A, V, B	512Mb 64Mb ⁸ * I, A, V, B
64–128Mb	256Mb 64Mb * W		256Mb 64Mb * W				256Mb 64Mb ⁸ * I, A, V, B		256Mb 64Mb ⁸ * I, A, V, B	
			128Mb 64Mb * W				128Mb 64Mb ⁸ * I, A, V, B		128Mb 64Mb ⁸ * I, A, V, B	
			128Mb 32Mb * W			64Mb 32Mb * I				
			64Mb 32Mb * W							

¹ Address Data Parallel (ADP) Burst

² Address Data Multiplex (ADM) Burst

³ Address High, Address Low, Data Multiplex (AADM) Burst

⁴ Parallel, Page Mode

⁵ HyperFlash

⁶ DRAM Version 2

⁷ DRAM Version 1

⁸ HyperRAM™

* W = Wireless: -25°C to +85°C

I = Industrial: -40°C to +85°C

A = Automotive, AEC-Q100 Grade 3: -40°C to +85°C

V = Industrial-plus: -40°C to +105°C

B = Automotive, AEC-Q100 Grade 2: -40°C to +105°C

Status
Availability
EOL (Last-Time-Ship)



x8 Serial Memory Packages

Family	Interface	Series	Density	Device	SOIC-16 300 mil	BGA24 8 x 8 mm/5 x 5 Ball	BGA24 8 x 6 mm/5 x 5 Ball	KGD	
Semper™ Flash	HyperBus™	HS-T	256Mb	S28HS256T			CF	CF	
			512Mb	S28HS512T			UD	CF	
			1Gb	S28HS01GT		UD		CF	
			2Gb	S28HS02GT		CF			
			4Gb	S28HS04GT		CF			
		HS-T	256Mb	S26HS256T				CF	CF
			512Mb	S26HS512T				UD	CF
			1Gb	S26HS01GT		UD		CF	
			2Gb	S26HS02GT		CF			
			4Gb	S26HS04GT		CF			
		HL-T	256Mb	S28HL256T				CF	CF
			512Mb	S28HL512T				UD	CF
			1Gb	S28HL01GT		UD		CF	
			2Gb	S28HL02GT		CF			
			4Gb	S28HL04GT		CF			
		HL-T	256Mb	S26HL256T				CF	CF
			512Mb	S26HL512T				UD	CF
			1Gb	S26HL01GT		UD		CF	
			2Gb	S26HL02GT		CF			
			4Gb	S26HL04GT		CF			
HyperFlash		KS-S	128Mb	S26KS128S			✓	UD	
			256Mb	S26KS256S			✓	CF	
			512Mb	S26KS512S			✓	CF	
		KL-S	128Mb	S26KL128S				✓	CF
			256Mb	S26KL256S				✓	CF
512Mb	S26KL512S					✓	CF		
	FS-S Dual Quad	256Mb	S79FS256S				CF		
		512Mb	S79FS512S				CF		
1Gb		S79FS01GS				✓			
QSPI	QSPI	FL-S Dual Quad	256Mb	S79FL256S	✓				
			512Mb	S79FL512S	✓				
			1Gb	S79FL01GS				✓	

CF = Contact Factory
UD = Under Development



x4 Serial NOR Flash Memory Packages

Family	Interface	Series	Density	Device	SOIC-8 150 mil	SOIC-8 208 mil	SOIC-16 300 mil	WSON 4 x 4 mm	WSON 6 x 5 mm	WSON 8 x 6 mm	BGA24 8 x 8 mm 5 x 5 Ball	BGA24 8 x 6 mm 5 x 5 Ball	BGA24 8 x 6 mm 4 x 6 Ball	KGD	
Semper™ Flash	QSPI	HS-T	256Mb	S25HS256T			CF			CF		CF		CF	
			512Mb	S25HS512T			UD			UD		UD		CF	
			1Gb	S25HS01GT			UD					UD		CF	
			2Gb	S25HS02GT								CF			
			4Gb	S25HS04GT								CF			
		HL-T	256Mb	S25HL256T					CF			CF		CF	CF
			512Mb	S25HL512T					UD			UD		UD	CF
			1Gb	S25HL01GT					UD				UD		CF
			2Gb	S25HL02GT									UD		
			4Gb	S25HL04GT									CF		
QSPI	QSPI	FS-S	64Mb	S25FS064S		✓			✓			✓		✓	
			128Mb	S25FS128S		✓	CF		✓	✓		✓	✓	CF	
			256Mb	S25FS256S			✓			✓		✓	✓	✓	
			512Mb	S25FS512S			✓			✓		✓	✓	✓	CF
			1Gb	S70FS01GS			✓					✓	✓	✓	
		FL-S	128Mb	S25FL127S			✓	✓		✓			✓	✓	
			128Mb	S25FL128S				✓			✓		✓	✓	
			256Mb	S25FL256S				✓			✓		✓	✓	
			512Mb	S25FL512S				✓					✓	✓	✓
			1Gb	S70FL01GS				✓					✓	✓	
		FL-L	64Mb	S25FL064L			✓	✓		✓	✓		✓	✓	CF
			128Mb	S25FL128L			✓	✓		✓	✓		✓	✓	CF
			256Mb	S25FL256L				✓			✓		✓	✓	CF
		FL1-K	16Mb	S25FL116K		✓	✓			✓	✓		✓	✓	✓
			32Mb	S25FL132K		✓	✓		✓	✓			✓	✓	✓
64Mb	S25FL164K				✓	✓		✓			✓	✓	✓		

CF = Contact Factory
UD = Under Development

Parallel NOR Flash Memory Packages

Family	Density	Device	48-Ball FBGA (0.8-mm pitch)	48-Ball FBGA (0.5-mm pitch)	56-Ball BGA (0.8-mm pitch)	64-Ball BGA (0.8-mm pitch)	64-Ball Fortified BGA (1.0-mm pitch)	48-Pin TSOP	56-Pin TSOP	KGD
GL-T	512Mb	S29GL512T			✓		✓		✓	
	1Gb	S29GL01GT			✓		✓		✓	
	2Gb	S70GL02GT					✓			
GL-S	64Mb	S29GL064S	✓				✓	✓	✓	
	128Mb	S29GL128S			✓		✓		✓	✓
	256Mb	S29GL256S			✓		✓		✓	✓
	512Mb	S29GL512S			✓		✓		✓	✓
	1Gb	S29GL01GS					✓		✓	✓
	2Gb	S70GL02GS					✓			
GL-P	128Mb	S29GL128P					✓		✓	✓
	256Mb	S29GL256P					✓		✓	✓
GL-N	32Mb	S29GL032N	✓				✓	✓	✓	✓
	64Mb	S29GL064N	✓				✓	✓	✓	✓
PL-J	32Mb	S29PL032J	✓		✓					
	64Mb	S29PL064J	✓		✓					
	128Mb	S29PL127J				✓			✓	✓
JL-J	32Mb	S29JL032J	✓					✓		
	64Mb	S29JL064J	✓					✓		✓
AL-J	8Mb	S29AL008J	✓					✓		✓
	16Mb	S29AL016J	✓				✓	✓		✓
AS-J	16Mb	S29AS016J	✓	✓				✓		✓

Burst NOR Flash Memory Packages

Family	Density	Device	44-Ball FBGA (0.5-mm pitch)	64-Ball BGA (0.5-mm pitch)	84-Ball Fortified BGA (0.8-mm pitch)	80-Ball FBGA (1.0-mm pitch)	80-Pin PQFP	KGD
WS-P	128Mb	S29WS128P			✓			
	256Mb	S29WS256P			✓			
	512Mb	S29WS512P			✓			
NS-P	512Mb	S29NS512P		✓				
VS-R	64Mb	S29VS064R	✓					
	128Mb	S29VS128R	✓					
	256Mb	S29VS256R	✓					
XS-R	64Mb	S29XS064R	✓					
	128Mb	S29XS128R	✓					
	256Mb	S29XS256R	✓					
CD-J	16Mb	S29CD016J				✓	✓	✓
	32Mb	S29CD032J				✓	✓	
CL-J	16Mb	S29CL016J				✓	✓	
	32Mb	S29CL032J				✓	✓	

Flash and RAM Memory MCP Packages

Family	Flash Density	RAM Density	BGA24 8 x 6 mm 5 x 5 Ball	56-Ball Very Thin FBGA (0.5-mm pitch)	56-Ball FBGA (0.8-mm pitch)	84-Ball FBGA (0.8-mm pitch)	130-Ball BGA (0.65-mm pitch)	133-Ball FBGA (0.5-mm pitch)
S71KS-S	128Mb	64Mb	✓					
	256Mb	64Mb	✓					
	512Mb	64Mb	✓					
S71KL-S	128Mb	64Mb	✓					
	256Mb	64Mb	✓					
	512Mb	64Mb	✓					
S98GL-N	64Mb	32Mb			✓			
S72XS-R	256Mb	256Mb					✓	
S72VS-R	256Mb	256Mb					✓	
S71VS-R	256Mb	128Mb		✓				
	256Mb	64Mb		✓				
	128Mb	64Mb		✓				
	128Mb	32Mb		✓				
	64Mb	32Mb		✓				
S71NS-P	512Mb	128Mb		✓				
S71WS-P	256Mb	64Mb				✓		



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