



CYPRESS[®]
EMBEDDED IN TOMORROW™

Cypress Roadmap: Flash Memory

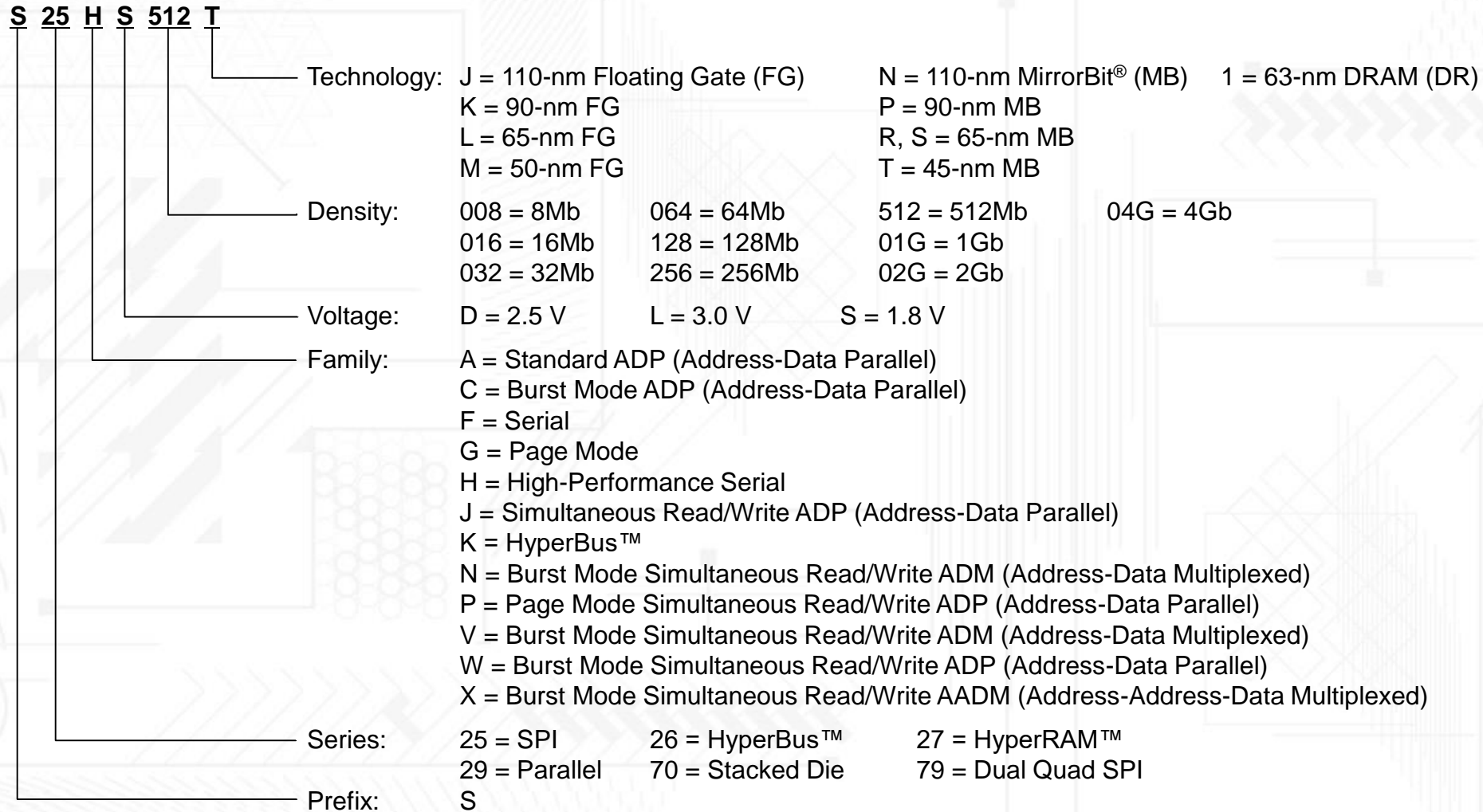
Q1 2018



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	2018	2019	2020	2021	2022
High Performance	Quad SPI	Hybrid	S25HS-T S25HL-T	1.8V 3.0V	512Mb-4Gb	512Mb	45nm MB	█	█	█	█	█
	HyperBus ¹		S26HS-T S26HL-T	1.8V 3.0V	512Mb-4Gb	512Mb	45nm MB	█	█	█	█	█
QSPI	QSPI	Hybrid	S25FL-S	3.0V	128Mb-1Gb	-	65nm MB	█	█	█	█	█
			S25FS-S	1.8V	64Mb-1Gb	-	65nm MB	█	█	█	█	█
		Uniform 4kB	S25FL-L	3.0V	64Mb-256Mb	-	65nm FG	█	█	█	█	█
Dual Quad SPI	QSPI	Hybrid	S79FS-S S79FL-S	1.8V 3.0V	256Mb-1Gb	-	65nm MB	█	█	█	█	█
HyperFlash	HyperBus	Hybrid	S26KS-S S26KL-S	3.0V	128Mb-512b	-	65nm MB	█	█	█	█	█
HyperRAM	HyperBus	N/A	S27KS-1 S27KL-1	1.8V 3.0V	64Mb-256Mb	-	63nm DR	█	█	█	█	█
Parallel	Parallel	Hybrid	S29GL-T	3.0V	512Mb-2Gb	-	45nm MB	█	█	█	█	█

¹ JEDEC xSPI Compliant

 Concept
 Samples
 Production
 EOL

x8 Serial Memory Roadmap

Product Family	Density	(Prod) [EOL]	2018				2019				2020				2021				2022				
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
S26HS-T ¹ (1.8 V) S26HL-T ¹ (3.0 V) HyperFlash 45-nm MB ²	4Gb ³ 2Gb ³ 1Gb 512Mb	(TBD) (TBD) (Q3'19) (Q1'19)																					
S26KS-S (1.8 V) S26KL-S (3.0 V) HyperFlash 65-nm MB ²	512Mb 256Mb 128Mb																						
S79FS-S (1.8 V) Dual Quad SPI 65-nm MB ²	1Gb ⁴ 512Mb ⁴ 256Mb ⁴	(TBD) (TBD)																					
S79FL-S (3.0 V) Dual Quad SPI 65-nm MB ²	1Gb ⁴ 512Mb ⁴ 256Mb ⁴																						
S27KS-1 (1.8 V) S27KL-1 (3.0 V) HyperRAM 63-nm DRAM	256Mb ⁵ 128Mb ⁵ 64Mb	(TBD) (Q4'17)																					

¹ JEDEC xSPI Compliant

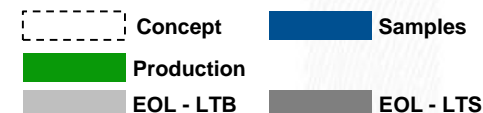
² Hybrid Sector

³ Stacked Die

⁴ S79 Dual Quad SPI

⁵ S70 Series (Stacked Die)

Products supported by
Longevity Program unless noted



x8 Memory Portfolio

	HyperRAM S27KL-1 63-nm DR, 3.0 V	HyperRAM S27KS-1 63-nm DR, 1.8 V	Dual Quad SPI S79FL-S ¹ 65-nm MB, 3.0 V	HyperFlash S26KL-S ¹ 65-nm MB, 3.0 V	HyperFlash S26HL-T ^{1, 2} 45-nm MB, 3.0 V	Dual Quad SPI S79FS-S ¹ 65-nm MB, 1.8 V	HyperFlash S26KS-S ¹ 65-nm MB, 1.8 V	HyperFlash S26HS-T ^{1, 2} 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								
64–128Mb			1Gb 133 MHz/80 MHz * I, A, V, B		4Gb⁵ 80 ns/200 MHz * I, A, V, B, M		4Gb⁵ 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, N ⁴ , M ⁴	2Gb⁵ 80 ns/200 MHz * I, A, V, B, M		2Gb⁵ 80 ns/200 MHz * I, A, V, B, M		
	256Mb^{3, 4} 36 ns/100 MHz * I, A, V, B	256Mb^{3, 4} 36 ns/166 MHz * I, A, V, B	256Mb 133 MHz/80 MHz * I, A, V, B	256Mb 96 ns/166 MHz * I, A, V, B, N ⁴ , M ⁴	Q418 1Gb Q319 80 ns/200 MHz * I, A, V, B, M	1Gb 133 MHz/102 MHz * I, A, V, B	Q418 1Gb Q319 80 ns/200 MHz * I, A, V, B, M	Q418 1Gb Q319 80 ns/200 MHz * I, A, V, B, M	
	128Mb³ 36 ns/100 MHz * I, A, V, B	128Mb³ 36 ns/166 MHz * I, A, V, B		128Mb 96 ns/166 MHz * I, A, V, B, N ⁴ , M ⁴	Q218 512Mb Q119 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, N ⁴ , M ⁴	Q218 512Mb Q119 80 ns/200 MHz * I, A, V, B, M	
64Mb 36 ns/100 MHz * I, A, V, B	64Mb 36 ns/166 MHz * I, A, V, B				256Mb 133 MHz/80 MHz * I, A, V, B	256Mb 96 ns/166 MHz * I, A, V, B, N ⁴ , M ⁴	128Mb 96 ns/166 MHz * I, A, V, B, N ⁴ , M ⁴		

¹ Hybrid Sector
² JEDEC xSPI Complainant
³ S70 series (stacked die)
⁴ Contact Sales
⁵ 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
		QQYY	QQYY
			QQYY



x4 Serial NOR Flash Memory Roadmap

Product Family	Density	(Prod) [EOL]	2018				2019				2020				2021				2022			
			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) QSPI 45-nm MB ¹	4Gb ³ 2Gb ³ 1Gb 512Mb	(TBD) (TBD) (Q3'19) (Q1'19)																				
S25FS-S (1.8 V) QSPI 65-nm MB ¹	1Gb ⁴ 512Mb 256Mb 128Mb 64Mb																					
S25FL-L (3.0 V) QSPI 65-nm FG ²	256Mb 128Mb 64Mb																					
S25FL-S (3.0 V) QSPI 65-nm MB ¹	1Gb ⁴ 512Mb 256Mb 128Mb ⁵																					
S25FL-P (3.0 V) QSPI 90-nm MB ¹	128Mb ⁶ 64Mb 32Mb	[Q3'18] [Q1'18] [Q1'18]																				
S25FL1-K (3.0 V) QSPI 90-nm FG ²	64Mb 32Mb 16Mb	[Q1'18] [Q1'18] [Q1'18]																				

¹ Hybrid Sector
² Uniform Sector
³ Stacked die
⁴ S70 Series (stacked die)
⁵ S25FL127S & S25FL128S
⁶ S25FL128P & S25FL129P

Products supported by Longevity Program unless noted



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	QSPI S25HL-T ² 45-nm MB, 3.0 V	QSPI S25FS-S ² 65-nm MB, 1.8 V	QSPI 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		4Gb³ 166 MHz/102 MHz * I, A, V, B, M 2Gb³ 166 MHz/102 MHz * I, A, V, B, M		4Gb³ 166 MHz/102 MHz * I, A, V, B, M 2Gb³ 166 MHz/102 MHz * I, A, V, B, M
		1Gb⁴ 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, N, M	1Gb 166 MHz/102 MHz * I, A, V, B, M 512Mb 166 MHz/102 MHz * I, A, V, B, M	1Gb⁴ 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	1Gb 166 MHz/102 MHz * I, A, V, B, M 512Mb 166 MHz/102 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	128Mb⁵ 133 MHz/80 MHz * I, A, V, B, N, M 128Mb⁶ 108 MHz/-- * I, A, V, B		128Mb 133 MHz/80 MHz * I, A, V, B, M 64Mb 133 MHz/80 MHz * I, A, V, B, N, M	
≤32Mb					

¹ Uniform Sector
² Hybrid Sector
³ Stacked die

⁴ S70 series (stacked die)
⁵ S25FL128S 133-MHz SDR 80-MHz DDR
⁶ S25FL127S 108-MHz SDR

* 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

Concept
 Development
 Sampling
 Production

Concept
 Development
 Sampling
 Production



Parallel NOR Flash Memory Roadmap

Product Family	Density (Prod) [EOL]	2018				2019				2020				2021				2022			
		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 8Mb	[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	
				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	
64–128Mb			64Mb 55 ns/-- * I, A	64Mb 55 ns/20 ns * I, A	64Mb 90 ns/25 ns * I, A			
≤32Mb			32Mb 60 ns/-- * I, A	32Mb 55 ns/20 ns * I, A	32Mb 90 ns/25 ns * I, A			
	16Mb 70 ns/-- * I, A	16Mb 55 ns/-- * I, A, N, M						
	8Mb 70 ns/-- * I, A	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

QQYY
QQYY
QQYY



Burst NOR Flash Memory Roadmap

Product Family	Density	(Prod) [EOL]	2018				2019				2020				2021				2022			
			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 ADP (Address Data Parallel) Burst

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

³ ADM (Address Data Multiplex) 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 ADP (Address Data Parallel) Burst

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

³ ADM (Address Data Multiplex) 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

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	KS-S 256Mb 96 n /166 MHz * I, V, N	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	Q418 KS-S 128Mb Q418 96 ns/66 MHz * I, V, N	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

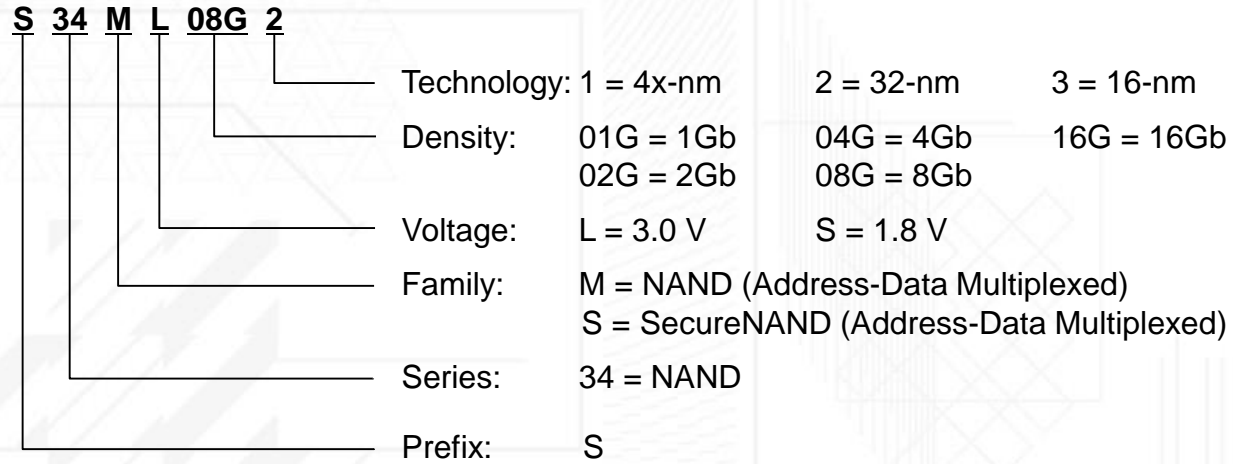
* I = Industrial: -40°C to +85°C
 V = Industrial-plus: -40°C to +105°C
 N = Extended: -40°C to +125°C



NAND Flash Memory Family



NAND Flash Memory Family Decoder



NAND Flash Memory Roadmap

Product Family	Density	(Prod) [EOL]	2018				2019				2020				2021				2022							
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
S34MS-2 (1.8 V) 32-nm SLC ONFI ¹ 1.0	16Gb 8Gb 4Gb 2Gb 1Gb		Production																							
S34MS-1 (1.8 V) 4x-nm SLC ONFI ¹ 1.0	4Gb 2Gb 1Gb	[Q2'19] [Q2'19] [Q2'19]	Production		EOL - LTB				EOL - LTS																	
S34SL-2 (3.0 V) 32-nm SLC ONFI ¹ 1.0	4Gb 2Gb 1Gb		Production																							
S34ML-3 (3.0 V) 16-nm SLC ONFI ¹ 1.0	16Gb 8Gb 4Gb	(TBD) (TBD) (Q3'18)	Samples		Production																					
S34ML-2 (3.0 V) 32-nm SLC ONFI ¹ 1.0	16Gb 8Gb 4Gb 2Gb 1Gb		Production																							
S34ML-1 (3.0 V) 4x-nm SLC ONFI ¹ 1.0	8Gb 4Gb 2Gb 1Gb	[Q2'19] [Q2'19] [Q2'19] [Q2'19]	Production		EOL - LTB				EOL - LTS																	

¹ Open NAND Flash Interface

Products supported by
Longevity Program unless noted



SLC NAND Flash Memory Portfolio

	S34ML-1 ¹ 4x-nm, 3.0 V SLC, ONFI 1.0 ²	S34ML-2 ³ 32-nm, 3.0 V SLC, ONFI 1.0	S34ML-3 ¹ 16-nm, 3.0 V SLC, ONFI 1.0	S34SL-2 ^{3, 4} 32-nm, 3.0 V SLC, ONFI 1.0	S34MS-1 ¹ 4x-nm, 1.8 V SLC, ONFI 1.0	S34MS-2 ³ 32-nm, 1.8 V SLC, ONFI 1.0
8-16Gb	Density; Bus Width Interface Bandwidth * Temperature Range					
	All parts supported by Longevity Program unless noted					
	16Gb; x8 40 MBps * I, A ⁵ , V ⁵ , B ⁵	16Gb; x8 40 MBps * I, A, V, B	16Gb; x8 40 MBps * I, A, V, B			16Gb; x8 40 MBps * I, A ⁵ , V ⁵ , B ⁵
	8Gb; x8 40 MBps * I, A, V ⁵ , B	8Gb; x8 40 MBps * I, A, V, B	8Gb; x8 40 MBps * I, A, V, B			8Gb; x8 40 MBps * I, A, V, B
1-4Gb	4Gb; x8/16 40 MBps * I, A, V, B	4Gb; x8/16 40 MBps * I, A, V, B	Q118 4Gb; x8 Q318 40 MBps * I, A, V, B	4Gb; x8 40 MBps * I, V	4Gb; x8 40 MBps * I, A ⁵ , V, B	4Gb; x8/16 40 MBps * I, A, V, B
	2Gb; x8/16 40 MBps * I, A, V, B	2Gb; x8/16 40 MBps * I, A ⁵ , V ⁵ , B ⁵		2Gb; x8 40 MBps * I, V ⁵	2Gb; x8/16 40 MBps * I, A ⁵ , V, B	2Gb; x8/16 40 MBps * I, A ⁵ , V ⁵ , B ⁵
	1Gb; x8 40 MBps * I, A, V, B	1Gb; x8/16 40 MBps * I, A, V, B		1Gb; x8 40 MBps * I, V	1Gb; x8/16 40 MBps * I, A ⁵ , V, B	1Gb; x8/16 40 MBps * I, A, V, B

¹ 1-bit error-correcting code (ECC)

² Open NAND Flash Interface

³ 4-bit error-correcting code (ECC)

⁴ SecureNAND™: Cypress' SLC NAND Flash Memory
with full-capacity volatile and nonvolatile block protection

⁵ Contact Sales

* I = Industrial: -40°C to +85°C

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

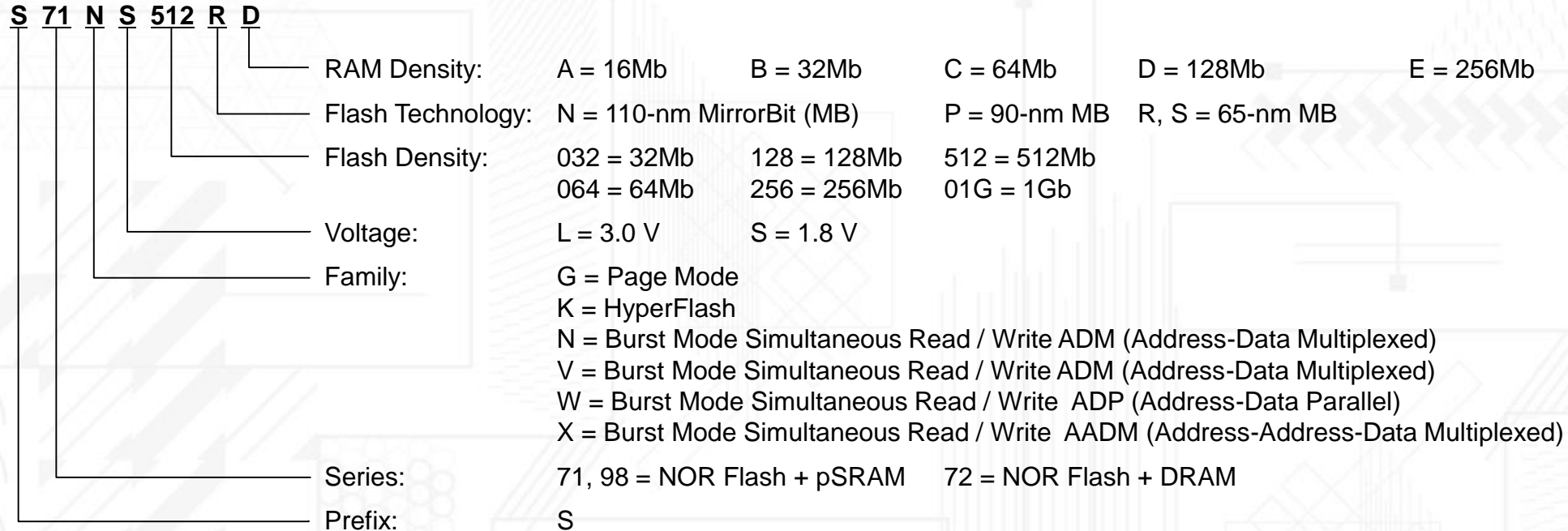
V = Industrial-plus: -40°C to +105°C

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

Flash and RAM Memory MCP



Flash and RAM Memory MCP Decoder



Flash and RAM Memory MCP Roadmap

Product Family Flash / RAM	Flash / RAM Density	(Prod) [EOL]	2018				2019				2020				2021				2022			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
S71KS-S (1.8 V) HyperFlash/ HyperRAM	512Mb/64Mb 256Mb/64Mb 128Mb/64Mb	(TBD) (TBD)	Production																			
S71KL-S (3.0 V) HyperFlash/ HyperRAM	512Mb/64Mb 256Mb/64Mb 128Mb/64Mb	(TBD)	Production																			
S98GL-N (3.0 V) 110-nm MB/pSRAM	64Mb/32Mb		Production																			
S72XS-R (1.8 V) 65-nm MB/DRAM	256Mb/256Mb		Production																			
S72VS-R (1.8 V) 65-nm MB/DRAM	256Mb/256Mb		Production																			
S71VS-R (1.8 V) 65-nm MB/pSRAM	256Mb/128Mb 256Mb/64Mb 128Mb/64Mb 128Mb/32Mb 64Mb/32Mb		Production																			
S71NS-P (1.8 V) 90-nm MB/pSRAM	512Mb/128Mb		Production																			
S71WS-P (1.8 V) 90-nm MB/pSRAM	256Mb/64Mb		Production																			

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	S71KS-S ⁵ 65-nm MB, 1.8 V
≥256Mb	Flash Density RAM Density * Temperature Range	All parts supported by Longevity Program unless noted						
		512Mb 128Mb * W	256Mb 128Mb * W	256Mb 256Mb * W	256Mb 256Mb ⁶ * I		512Mb 64Mb ⁸ * I, A, V, B	512Mb 64Mb ⁸ * I, A, V, B
64-128Mb	256Mb 64Mb * W		256Mb 64Mb * W		256Mb 256Mb ⁷ * W, I		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 * W			64Mb 32Mb * I		

¹ ADP (Address Data Parallel) Burst

² ADM (Address Data Multiplex) Burst

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

Concept
 Development
 Sampling
 Production

QQYY
QQYY
QQYY



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	
HyperFlash	HyperBus	HS-T	512Mb	S26HS512T		CF	CF	CF	
			1Gb	S26HS01GT		CF		CF	
			2Gb	S26HS02GT		CF			
			4Gb	S26HS04GT		CF			
		HL-T	512Mb	S26HL512T		CF		CF	CF
			1Gb	S26HL01GT		CF			CF
			2Gb	S26HL02GT		CF			
			4Gb	S26HL04GT		CF			
		KS-S	128Mb	S26KS128S				✓	CF
			256Mb	S26KS256S				✓	CF
			512Mb	S26KS512S				✓	CF
		KL-S	128Mb	S26KL128S				✓	CF
			256Mb	S26KL256S				✓	CF
			512Mb	S26KL512S				✓	CF
HyperRAM	HyperBus	KS-1	64Mb	S26KS064I			✓	CF	
			128Mb	S70KS128I			✓		
			256Mb	S70KS256I			✓		
		KL-1	64Mb	S26KL064I				✓	CF
			128Mb	S70KL128I				✓	
256Mb	S70KL256I				✓				
QSPI	QSPI	FS-S Dual Quad	256Mb	S79FS256S					
			512Mb	S79FS512S					
			1Gb	S79FS01GS				✓	
		FL-S Dual Quad	256Mb	S79FL256S	✓				
			512Mb	S79FL512S	✓				
			1Gb	S79FL01GS				✓	

CF = Contact Factory

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		
QSPI	QSPI	HS-T	512Mb	S25HS512T			CF				CF	CF		CF		
			1Gb	S25HS01GT			CF					CF			CF	
			2Gb	S25HS02GT									CF			
			4Gb	S25HS04GT									CF			
		HL-T	512Mb	S25HL512T					CF				CF	CF		CF
			1Gb	S25HL01GT					CF				CF			CF
			2Gb	S25HL02GT									CF			
			4Gb	S25HL04GT									CF			
		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-P	32Mb	S25FL032P				✓	✓		✓	✓		✓	✓	✓
			64Mb	S25FL064P					✓			✓		✓	✓	✓
			128Mb	S25FL128P					✓			✓		✓	✓	
			128Mb	S25FL129P					✓			✓		✓	✓	
		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	8Mb	S29AS008J	✓					✓		✓
	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				✓	✓	

SLC NAND and Secure NAND Flash Memory Packages

Family	Density	Device	63-Ball BGA (0.8-mm pitch)	67-Ball BGA (0.8-mm pitch)	48-Pin TSOP
MS-2	1Gb	S34MS01G2	✓	✓	✓
	2Gb	S34MS02G2	✓	✓	✓
	4Gb	S34MS04G2	✓		✓
	8Gb	S34MS08G2	✓		
	16Gb	S34MS16G2	✓		
MS-1	1Gb	S34MS01G1	✓		
	2Gb	S34MS02G1	✓		✓
	4Gb	S34MS04G1	✓		✓
ML-3	4Gb	S34ML04G3	✓		✓
	8Gb	S34ML08G3	✓		✓
	16Gb	S34ML16G3	✓		✓
ML-2	1Gb	S34ML01G2	✓	✓	✓
	2Gb	S34ML02G2	✓	✓	✓
	4Gb	S34ML04G2	✓		✓
	8Gb	S34ML08G2	✓		✓
	16Gb	S34ML16G2	✓		✓
ML-1	1Gb	S34ML01G1	✓		✓
	2Gb	S34ML02G1	✓		✓
	4Gb	S34ML04G1	✓		✓
	8Gb	S34ML08G1	✓		✓
SL-2	1Gb	S34SL01G2	✓		
	2Gb	S34SL02G2	✓		
	4Gb	S34SL04G2	✓		

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				✓		



CYPRESS[®]
EMBEDDED IN TOMORROW[™]