



Cypress Roadmap: Automotive Flash Memory

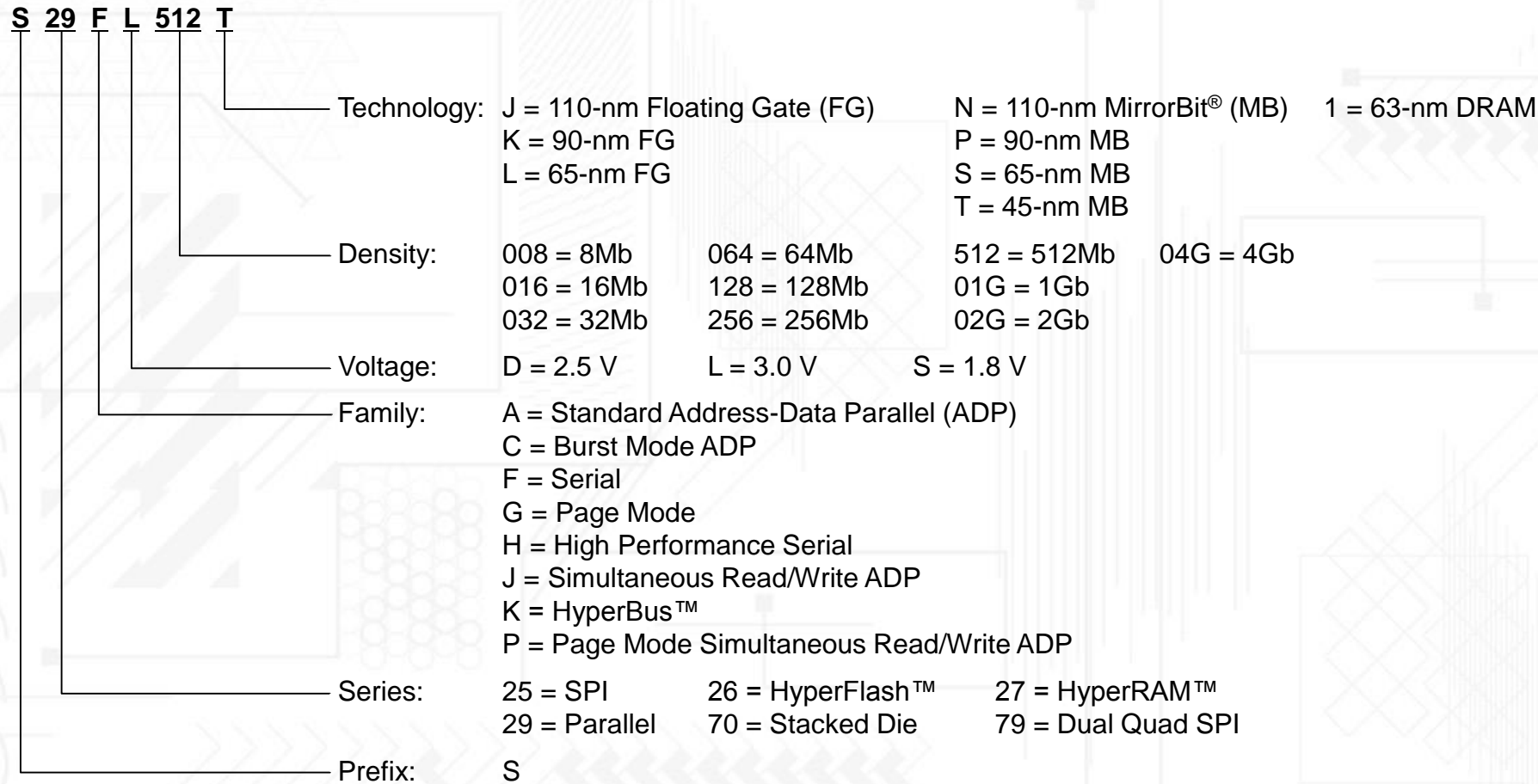
Q3 2017



NOR Flash Memory Automotive Family



NOR Flash Memory Automotive Family Decoder



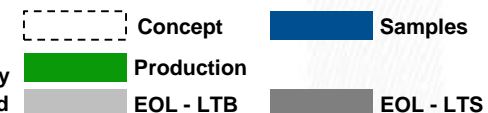
NOR Flash Memory Automotive Product Portfolio – New Products

Category	Interface	Sector Size	Family	Voltage	Densities	Tech	2017	2018	2019	2020	2021	2021	2023	
Serial	Quad SPI	Hybrid	S25FL-S	3.0V	128Mb-1Gb	65nm MB								
			S25FS-S	1.8V	64Mb-1Gb	65nm MB								
			S25FL-T	3.0V	512Mb-4Gb	45nm MB								
			S25FS-T	1.8V	512Mb-4Gb	45nm MB								
		Uniform 4kB	S25FL-L	3.0V	64Mb-256Mb	65nm FG								
	Dual QSPI	Hybrid	S79FL-S	3.0V	256Mb-1Gb	65nm MB								
HyperFlash	HyperBus	Hybrid	S26KL-S	3.0V	128Mb-1Gb	65nm MB								
			S26KS-S	1.8V	128Mb-1Gb	65nm MB								
			S26KL-T	3.0V	512Mb-4Gb	45nm MB								
			S26KS-T	1.8V	512Mb-4Gb	45nm MB								
HyperRAM	HyperBus	N/A	S27KL-1	3.0V	64Mb-256Mb	63nm DR								
		N/A	S27KS-1	1.8V	64Mb-256Mb	63nm DR								
Parallel	Parallel	Hybrid	S29GL-T	3.0V	512Mb-2Gb	45nm MB								

HyperFlash™, HyperRAM™ and Burst Parallel NOR Flash Memory Automotive Roadmap

Product Family	Density	(Prod) [EOL]	2017				2018				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	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
S26KS-T 45-nm MB 1.8 V	4Gb ¹ 2Gb ¹ 1Gb 512Mb	(TBD) (TBD) (Q4'18) (Q3'18)																												
S26KS-S 65-nm MB 1.8 V	1Gb ¹ 512Mb 256Mb 128Mb	(TBD)																												
S26KL-T 45-nm MB 3.0 V	4Gb ¹ 2Gb ¹ 1Gb 512Mb	(TBD) (TBD) (Q4'18) (Q3'18)																												
S26KL-S 65-nm MB 3.0 V	1Gb ¹ 512Mb 256Mb 128Mb	(TBD)																												
S27KS-1 63-nm DRAM 1.8 V	256Mb ¹ 128Mb ¹ 64Mb	(TBD) (Q3'17)																												
S27KL-1 63-nm DRAM 3.0 V	256Mb ¹ 128Mb ¹ 64Mb	(TBD) (Q3'17)																												
S29CD-J 110-nm FG 2.5 V	32Mb 16Mb																													
S29CL-J 110-nm FG 3.0 V	32Mb 16Mb																													

¹ S70 Series



Products supported by Longevity Program unless noted



HyperFlash™, HyperRAM™ and Burst Parallel NOR Flash Memory Automotive Portfolio

	S29CL-J ¹ 110 nm, 3.0 V	S29CD-J ¹ 110 nm, 2.5 V	HyperRAM S27KL-1 ² 63 nm, 3.0 V	HyperRAM S27KS-1 ² 63 nm, 1.8 V	HyperFlash S26KL-S ³ 65 nm 3.0 V	HyperFlash S26KL-T ³ 45 nm, 3.0 V	HyperFlash S26KS-S ³ 65 nm 1.8 V	HyperFlash S26KS-T ³ 45 nm, 1.8 V
	Density (Name) Initial Access / DDR Clock * Temp Range	All parts supported by Longevity Program unless noted				2Gb ⁴ 96 ns / 200 MHz Contact Sales		2Gb ⁴ 96 ns / 100 MHz Contact Sales
≥256Mb					1Gb ⁴ 96 ns / 100 MHz Contact Sales	1Gb ⁴ Q318 96 ns / 200 MHz Contact Sales	1Gb ⁴ 96 ns / 166 MHz Contact Sales	1Gb ⁴ Q318 96 ns / 100 MHz Contact Sales
					512Mb 96 ns / 100 MHz * A, B, M	512Mb Q417 96 ns / 200 MHz * A, B, M	512Mb 96 ns / 166 MHz * A, B, M	512Mb Q417 96 ns / 100 MHz * A, B, M
64–128Mb			256Mb ⁴ 36 ns / 100 MHz Contact Sales	256Mb ⁴ 36 ns / 166 MHz Contact Sales	256Mb 96 ns / 100 MHz * A, B, M		256Mb 96 ns / 166 MHz * A, B, M	
			128Mb ⁴ Q317 36 ns / 100 MHz Contact Sales	128Mb ⁴ Q317 36 ns / 166 MHz Contact Sales	128Mb 96 ns / 100 MHz * A, B, M		128Mb 96 ns / 166 MHz * A, B, M	
≤32Mb	32Mb 54 ns / 75 MHz * A, M, T	32Mb 54 ns / 75 MHz * A, M, T						
	16Mb 54 ns / 66 MHz * A, M, T	16Mb 54 ns / 66 MHz * A, M, T						

* A = Automotive, AEC-Q100 Grade 3: -40°C to +85°C
 B = Automotive, AEC-Q100 Grade 2: -40°C to +105°C
 M = Automotive, AEC-Q100 Grade 1: -40°C to +125°C
 T = Automotive, AEC-Q100 Grade 0: -40°C to +145°C

¹ ADP (Address Data Parallel) Burst

³ S26 = HyperFlash

² S27 = HyperRAM

⁴ S70 series (stacked die)

Status Availability

EOL (Last-Time-Ship)

Concept
 Development
 Sampling
 Production



SPI NOR Flash Memory Automotive Portfolio

	S25FL1-K 90 nm, 3.0 V Uniform Sector ¹	S25FL-L 65 nm, 3.0 V Uniform Sector ¹	S25FL-P 90 nm, 3.0 V Hybrid Sector ¹	S25FL-S 65 nm, 3.0 V Hybrid Sector ¹	S79FL-S ² 65 nm, 3.0 V Hybrid Sector ¹	S25FL-T 45 nm, 3.0 V Hybrid Sector ¹	S25FS-S 65 nm, 1.8 V Hybrid Sector ¹	S25FS-T 45 nm, 1.8 V Hybrid Sector ¹
≥256Mb	Density (Name) SDR Clock / DDR Clock * Temp Range					4Gb ³ 166 MHz / 100 MHz * A, B, M		4Gb ³ 166 MHz / 100 MHz * A, B, M
	All parts supported by Longevity Program unless noted			1Gb ³ 133 MHz / 80 MHz * A, B, M	1Gb 133 MHz / 80 MHz * A, B	2Gb ³ 166 MHz / 100 MHz * A, B, M	1Gb ³ 133 MHz / 80 MHz * A, B, M	2Gb ³ 166 MHz / 100 MHz * A, B, M
		256Mb 133 MHz / 66 MHz * A, B, M		512Mb 133 MHz / 80 MHz * A, B, M	512Mb 133 MHz / 80 MHz * A, B	1Gb Q318 166 MHz / 100 MHz * A, B, M	512Mb 133 MHz / 80 MHz * A, B, M	1Gb Q318 166 MHz / 100 MHz * A, B, M
64–128Mb		128Mb 133 MHz / 66 MHz * A, B, M	256Mb ³ 104 MHz / -- * A	256Mb 133 MHz / 80 MHz * A, B, M	256Mb 133 MHz / 80 MHz * A, B	512Mb Q417 166 MHz / 100 MHz * A, B, M	256Mb 133 MHz / 80 MHz * A, B	512Mb Q417 166 MHz / 100 MHz * A, B, M
	64Mb Q119 108 MHz / -- * A, B	64Mb 108 MHz / 54 MHz * A, B, M	128Mb ⁴ 104 MHz / -- * A, B	128Mb ⁶ 133 MHz / 80 MHz * A, B, M			128Mb 133 MHz / 80 MHz * A, B	
	32Mb Q119 108 MHz / -- * A, B		128Mb ⁵ 104 MHz / -- * A, B	128Mb ⁷ 108 MHz / -- * A, B				
≤32Mb	16Mb Q119 108 MHz / -- * A, B		64Mb 104 MHz / -- * A, B				64Mb 133 MHz / 80 MHz * A, B, M	
			32Mb 104 MHz / -- * A, B					

* A = Automotive, AEC-Q100 Grade 3: -40°C to +85°C
 B = Automotive, AEC-Q100 Grade 2: -40°C to +105°C
 M = Automotive, AEC-Q100 Grade 1: -40°C to +125°C

¹ Logical sector size

² S79 series, Dual Quad SPI (stacked die)

³ S70 series (stacked die)

⁴ S25FL129P Quad SPI

⁵ S25FL128P Dual SPI

⁶ S25FL128S 133-MHz SDR / 80-MHz DDR

⁷ S25FL127S 108-MHz SDR

Status
 Availability
 EOL (Last-Time-Ship)

Concept Development Sampling Production
□ □ □ □
□ □ □ □
□ □ □ □



Parallel NOR Flash Memory Automotive Roadmap

Product Family	Density	(Prod) [EOL]	2017				2018				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	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
S29GL-T ¹ 45-nm MB / 3.0 V	2Gb ³ 1Gb 512Mb		[Production]																											
S29GL-S ¹ 65-nm MB / 3.0 V	2Gb ³ 1Gb 512Mb 256Mb 128Mb 64Mb		[Production]																											
S29GL-N ¹ 110-nm MB / 3.0 V	64Mb 32Mb		[Production]																											
S29PL-J ^{1,2} 110-nm FG / 3.0 V	128Mb 64Mb 32Mb		[Production]																											
S29JL-J ² 110-nm FG / 3.0 V	64Mb 32Mb		[Production]																											
S29AL-J 110-nm FG / 13.0 V	16Mb 8Mb		[Production]																											
S29AS-J 110-nm FG / 1.8 V	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

- Concept
- Samples
- Production
- EOL - LTB
- EOL - LTS



Parallel NOR Flash Memory Automotive Portfolio

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

* A = Automotive, AEC-Q100 Grade 3: -40°C to +85°C
 B = Automotive, AEC-Q100 Grade 2: -40°C to +105°C
 M = Automotive, AEC-Q100 Grade 1: -40°C to +125°C

¹ Supports Simultaneous Read/Write Operation ² Supports Page Mode ³ S70 series (stacked die)

Status Availability

EOL (Last-Time-Ship)

Concept
 Development
 Sampling
 Production

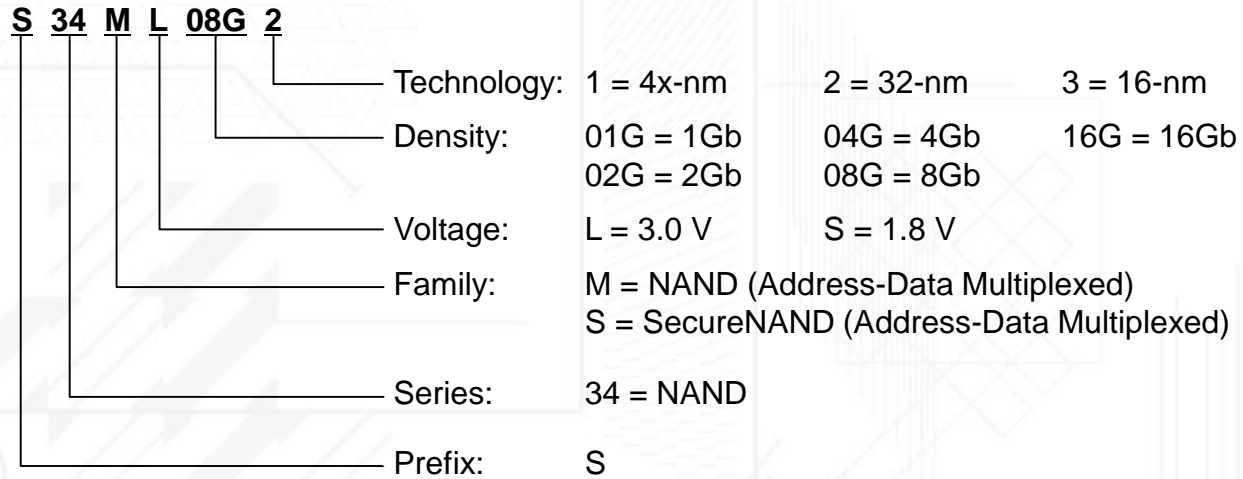
Sampling QQYY
 Production QQYY
 EOL QQYY



NAND Flash Memory Automotive Family

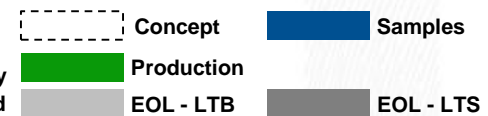


NAND Flash Memory Automotive Family Decoder



SLC NAND Flash Memory Automotive Roadmap

Product Family	Density	(Prod) [EOL]	2017				2018				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	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
S34MS-3 16-nm SLC, ONFI 1.0/1.8 V	16Gb	(TBD)																												
	8Gb	(TBD)																												
	4Gb	(Q4'18)																												
	2Gb	(TBD)																												
	1Gb	(TBD)																												
S34MS-2 32-nm SLC, ONFI 1.0/1.8 V	16Gb																													
	8Gb																													
	4Gb																													
	2Gb																													
S34MS-1 4x-nm SLC, ONFI 1.0/1.8 V	4Gb	[Q4'19]																												
	2Gb	[Q4'19]																												
	1Gb	[Q4'19]																												
S34SL-2 32-nm SLC, ONFI 1.0/3.0 V	4Gb																													
	2Gb																													
	1Gb																													
S34ML-3 16-nm SLC, ONFI 1.0/3.0 V	16Gb	(TBD)																												
	8Gb	(TBD)																												
	4Gb	(Q2'18)																												
	2Gb	(TBD)																												
S34ML-2 32-nm SLC, ONFI 1.0/3.0 V	16Gb																													
	8Gb																													
	4Gb																													
S34ML-1 4x-nm SLC, ONFI 1.0/3.0 V	2Gb																													
	1Gb																													
	8Gb	[Q4'19]																												
	4Gb	[Q4'19]																												
S34ML-1	2Gb	[Q4'19]																												
	1Gb	[Q4'19]																												
	1Gb	[Q4'19]																												



Products supported by Longevity Program unless noted



SLC NAND Flash Memory Automotive 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 ²	S34ML-3 ¹ 16 nm, 3.0 V SLC, ONFI 1.0 ²	S34SL-2 ^{3, 4} 32 nm, 3.0 V SLC, ONFI 1.0 ²	S34MS-1 ¹ 4x nm, 1.8 V SLC, ONFI 1.0 ²	S34MS-2 ³ 32 nm, 1.8 V SLC, ONFI 1.0 ²	S34MS-3 ¹ 16 nm, 1.8 V SLC, ONFI 1.0 ²
8-16Gb	Density; Bus Width Interface Bandwidth * Temp Range						
	All parts supported by Longevity Program unless noted						
		16Gb; x8 40 MBps * I, V ⁵	16Gb; x8 40 MBps * A, B			16Gb; x8 40 MBps * I, V ⁵	16Gb; x8 40 MBps * A, B
	8Gb; x8 40 MBps * A, B	8Gb; x8 40 MBps * A, B	8Gb; x8 40 MBps * A, B		8Gb; x8 40 MBps * A, B	8Gb; x8 40 MBps * A, B	
1-4Gb	4Gb; x8/16 40 MBps * A, B Q419	4Gb; x8/16 40 MBps * A, B	4Gb; x8 40 MBps * A, B Q118	4Gb; x8 40 MBps * I, V	4Gb; x8 40 MBps * A, B Q419	4Gb; x8/16 40 MBps * A, B	4Gb; x8 40 MBps * A, B Q318
	2Gb; x8/16 40 MBps * A, B Q419	2Gb; x8/16 40 MBps * A, B	2Gb; x8 40 MBps * A, B	2Gb; x8 40 MBps * I, V ⁵	2Gb; x8/16 40 MBps * A, B Q419	2Gb; x8/16 40 MBps * I, V ⁵	2Gb; x8 40 MBps * A, B
	1Gb; x8 40 MBps * A, B Q419	1Gb; x8/16 40 MBps * A, B	1Gb; x8 40 MBps * A, B	1Gb; x8 40 MBps * I, V	1Gb; x8/16 40 MBps * A, B Q419	1Gb; x8/16 40 MBps * A, B	1Gb; x8 40 MBps * A, B

* 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

¹ 1-bit Error-Correcting Code (ECC) ⁴ SecureNAND™: Cypress's SLC NAND Flash Memory with full-capacity volatile and nonvolatile block protection
² Open NAND Flash Interface
³ 4-bit Error-Correcting Code (ECC) ⁵ Contact Sales

Status Availability

EOL (Last-Time-Ship)

Concept
 Development
 Sampling
 Production

QQYY
QQYY
QQYY



Flash and RAM Memory Automotive MCP



Flash and RAM Memory Automotive MCP Decoder

S 71 K S 512 R D

RAM Density:	A = 16Mb	B = 32Mb	C = 64Mb	D = 128Mb	E = 256Mb
Flash Technology:	S = 65-nm MirrorBit (MB)		T = 45-nm MB		
Flash Density:	128 = 128Mb	256 = 256Mb	512 = 512Mb	01G = 1Gb	
Voltage:	L = 3.0 V	S = 1.8 V			
Family:	K = HyperFlash				
Series:	71 = NOR Flash + pSRAM				
Prefix:	S				

Flash and RAM Memory Automotive MCP Roadmap

Product Family Flash / RAM	Flash / RAM Density	(Prod) [EOL]	2017				2018				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	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
S71KS-T HyperFlash / HyperRAM 1.8 V	512Mb / 64Mb	(Q4'19)																																
S71KS-S HyperFlash / HyperRAM 1.8 V	512Mb / 64Mb 256Mb / 64Mb 128Mb / 64Mb	(TBD) (TBD)																																
S71KL-T HyperFlash / HyperRAM 3.0 V	512Mb / 64Mb	(Q4'19)																																
S71KL-S HyperFlash / HyperRAM 3.0 V	512Mb / 64Mb 256Mb / 64Mb 128Mb / 64Mb	(TBD)																																

Concept
 Samples
 Production
 EOL - LTB
 EOL - LTS

Products supported by Longevity Program unless noted

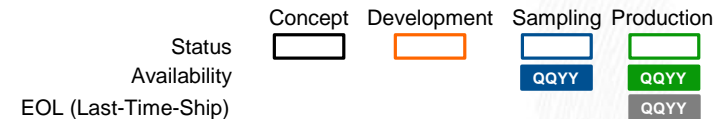


Flash and RAM Memory Automotive MCP Portfolio

	S71KL-S 65nm, MB 3.0V	S71KL-T 65nm, MB 3.0V	S71KS-S 65nm, MB 1.8V	S71KS-T 65nm, MB 1.8V
≥256Mb	Flash Density RAM Density * Temp Range			
	All parts supported by Longevity Program unless noted			
64–128Mb	512Mb ¹ 64Mb ² * A, B	512Mb ¹ 64Mb ² * A, B	512Mb ¹ 64Mb ² * A, B Q419	512Mb ¹ 64Mb ² * A, B Q419
	256Mb ¹ 64Mb ² * A, B		256Mb ¹ 64Mb ² * A, B	
	128Mb ¹ 64Mb ² * A, B		128Mb ¹ 64Mb ² * A, B	

* A = Automotive, AEC-Q100 Grade 3: -40°C to +85°C
 B = Automotive, AEC-Q100 Grade 2: -40°C to +105°C

¹ HyperFlash
² HyperRAM



HyperRAM™, HyperFlash™, and Burst Parallel NOR Flash Memory Packages

Family	Density	Device	BGA24 8 x 8 mm 5 x 5 Ball	BGA24 8 x 6 mm 5 x 5 Ball	80-ball FBGA (1.0-mm pitch)	80-pin PQFP	KGD
KS-T	512Mb	S26KS512T	CF	CF			CF
	1Gb	S26KS01GT	CF				CF
	2Gb	S70KS02GT	CF				
	4Gb	S70KS04GT	CF				
KS-S	128Mb	S26KS128S		✓			CF
	256Mb	S26KS256S		✓			CF
	512Mb	S26KS512S		✓			CF
	1Gb	S70KS01GS		✓			
KL-T	512Mb	S26KL512T	CF	CF			CF
	1Gb	S26KL01GT	CF				CF
	2Gb	S70KL02GT	CF				
	4Gb	S70KL04GT	CF				
KL-S	128Mb	S26KL128S		✓			CF
	256Mb	S26KL256S		✓			CF
	512Mb	S26KL512S		✓			CF
	1Gb	S70KL01GS		✓			
KS-1	64Mb	S26KS0641		✓			CF
	128Mb	S70KS1281		✓			
	256Mb	S70KS2561		✓			
KL-1	64Mb	S26KL0641		✓			CF
	128Mb	S70KL1281		✓			
	256Mb	S70KL2561		✓			
CD-J	16Mb	S29CD016J			✓	✓	✓
	32Mb	S29CD032J			✓	✓	
CL-J	16Mb	S29CL016J			✓	✓	
	32Mb	S29CL032J			✓	✓	

CF = Contact Factory

SPI NOR Flash Memory Packages

Family	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
FS-T	512Mb	S25FS512T			CF				CF	CF		CF
	1Gb	S25FS01GT			CF				CF			CF
	2Gb	S70FS02GT							CF			
	4Gb	S70FS04GT							CF			
FS-S	64Mb	S25FS064S		✓			✓			✓		✓
	128Mb	S25FS128S		✓	CF		✓	✓		✓	✓	CF
	256Mb	S25FS256S			✓		✓	✓		✓	✓	✓
	512Mb	S25FS512S			✓		✓			✓	✓	CF
	1Gb	S70FS01GS			✓					✓		
FL-T	512Mb	S25FL512T			CF				CF	CF		CF
	1Gb	S25FL01GT			CF				CF			CF
	2Gb	S70FL02GT							CF			
	4Gb	S70FL04GT							CF			
FL-S Dual Quad	256Mb	S79FL256S			✓							
	512Mb	S79FL512S			✓							
	1Gb	S79FL01GS								✓		
FL-S	128Mb	S25FL127S		✓	✓		✓			✓	✓	
	128Mb	S25FL128S			✓			✓		✓	✓	
	256Mb	S25FL256S			✓			✓		✓	✓	
	512Mb	S25FL512S			✓					✓	✓	✓
	1Gb	S70FL01GS			✓					✓		
FL-P	32Mb	S25FL032P		✓	✓		✓	✓		✓	✓	✓
	64Mb	S25FL064P			✓			✓		✓	✓	✓
	128Mb	S25FL128P			✓			✓				
	128Mb	S25FL129P			✓			✓		✓	✓	
	256Mb	S70FL256P			✓			✓		✓		
FL-L	64Mb	S25FL064L		✓	UD	✓	UD			✓	✓	CF
	128Mb	S25FL128L		✓	UD		✓			✓	✓	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
GL-T	512Mb	S29GL512T			✓		✓		✓
	1Gb	S29GL01GT			✓		✓		✓
	2Gb	S70GL02GT					✓		
GL-S	64Mb	S29GL064S	✓				✓	✓	✓
	128Mb	S29GL128S			✓		✓		✓
	256Mb	S29GL256S			✓		✓		✓
	512Mb	S29GL512S			✓		✓		✓
	1Gb	S29GL01GS					✓		✓
	2Gb	S70GL02GS					✓		
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	✓	✓				✓	

SLC 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-3	1Gb	S34MS01G3	✓		
	2Gb	S34MS02G3	✓		
	4Gb	S34MS04G3	✓		
	8Gb	S34MS08G3	✓		
	16Gb	S34MS16G3	✓		
MS-2	1Gb	S34MS01G2	✓	✓	✓
	2Gb	S34MS02G2	✓	✓	✓
	4Gb	S34MS04G2	✓		✓
	8Gb	S34MS08G2	✓		
	16Gb	S34MS16G2	✓		
MS-1	1Gb	S34MS01G1	✓		
	2Gb	S34MS02G1	✓		✓
	4Gb	S34MS04G1	✓		✓
ML-3	1Gb	S34ML01G3	✓		✓
	2Gb	S34ML02G3	✓		✓
	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	✓		✓

SecureNAND Flash Memory Packages

Family	Density	Device	63-Ball BGA (0.8-mm pitch)
SL-2	1Gb	S34SL01G2	✓
	2Gb	S34SL02G2	✓
	4Gb	S34SL04G2	✓

Flash and RAM Memory MCP Packages

Family	Flash Density	RAM Density	BGA24 8 x 6 mm, 1.0 mm pitch 5 x 5 Ball
S71KS-T	128Mb	64Mb	
	256Mb	64Mb	
	512Mb	64Mb	CF
S71KS-S	128Mb	64Mb	✓
	256Mb	64Mb	✓
	512Mb	64Mb	✓
S71KL-T	128Mb	64Mb	
	256Mb	64Mb	
	512Mb	64Mb	CF
S71KL-S	128Mb	64Mb	✓
	256Mb	64Mb	✓
	512Mb	64Mb	✓

CF = Contact Factory



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