CYPRESS

64Mb to 256Mb 3.0-V Quad SPI FL-L NOR Flash Memory With 4KB Uniform Sector Size

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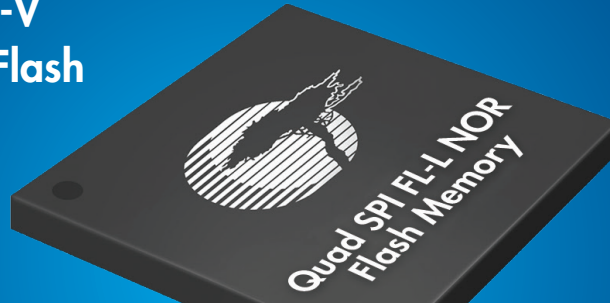
INTRODUCTION

The Cypress FL-L NOR Flash Memory family consists of the fastest Quad Serial Peripheral Interface (SPI) NOR Flash devices with 4KB uniform sector size for high-performance embedded systems. The low-pin-count Quad SPI reduces package sizes and enables a simplified board layout. Read bandwidth of up to 67 MBps ensures fast program execution for high-performance systems. A 4KB uniform sector size provides maximum flexibility for storing program code and parametric data, while improving the efficiency of memory usage. Cypress applies stringent testing and qualification processes to ensure all parts meet our world-class quality requirements. In addition, all FL-L NOR Flash memory family devices receive AEC-Q100 qualification and feature the extended temperature range of -40°C to 125°C.

FEATURES

SECTOR SIZE[1]
- 4KB Uniform

SPI CLOCK RATE with SDR Option
- 133 MHz (256Mb & 128Mb)
- 108 MHz (64Mb)

SPI CLOCK RATE with DDR Option
- 66 MHz (256Mb & 128Mb)
- 54 MHz (64Mb)

READ BANDWIDTH
- 67 MBps (256Mb & 128Mb)
- 54 MBps (64Mb)

PAGE PROGRAM TIMES (256B)(TYP)
- 300 µs (256Mb & 128Mb)
- 450 µs (64Mb)

SECTOR ERASE TIMES (TYP)
- 50 ms 4KB Erase (256Mb & 128Mb)
- 70 ms 4KB Erase (64Mb)

POWER[1]
- 2.7 V to 3.6 V Supply Voltage
- 30 mA Active Current (Typ)
- 20 µA Standby Current (Typ)
- 2 µA Idpd[2] (Typ)

TEMPERATURE RANGES[1]
- Industrial: -40°C to +85°C
- Industrial Plus: -40°C to +105°C
- Extended: -40°C to +125°C

AUTOMOTIVE SUPPORT[1]
- AEC-Q100 Qualification
- PPAP Support

PACKAGES
- 16-SOIC (300 mil) (256Mb)
- 8-SOIC (208 mil) (128Mb & 64Mb)
- 8-USON (64Mb)
- 24-ball BGA[1]

[1] Applicable to all FL-L family memory devices | [2] Deep power-down current

REDUCED PCB AREA AND COMPLEXITY

Cypress FL-L NOR Flash products save board space by utilizing a low-pin-count Quad SPI which enables package sizes as small as 16 mm[2]

ADDED SECURITY FEATURES

Register protection, region protection, and additional security regions outside of the main flash array offer un-paralleled data security

HIGH READ BANDWIDTH

Cypress FL-L NOR Flash products offer high read bandwidth of up to 67 MBps

4KB UNIFORM SECTOR SIZE WITH FAST PROGRAM AND SECTOR ERASE TIMES

- A uniform 4KB sector size provides maximum flexibility for storing program code and parametric data
- As little as 300 µs Page Program (256B) time (typical) increases manufacturing throughput
- Sector Erase (4KB) time (typical) as low as 50 ms enables new data to be written quickly

TARGET APPLICATIONS

- Video Game Consoles
- Advanced driver assistance systems (ADAS)
- Automotive instrument clusters and infotainment systems
- Networking devices
- Set-top boxes

www.cypress.com/NOR-Flash-FL-L

QUAD SPI FL-L NOR FLASH MEMORY FAMILY BLOCK DIAGRAM
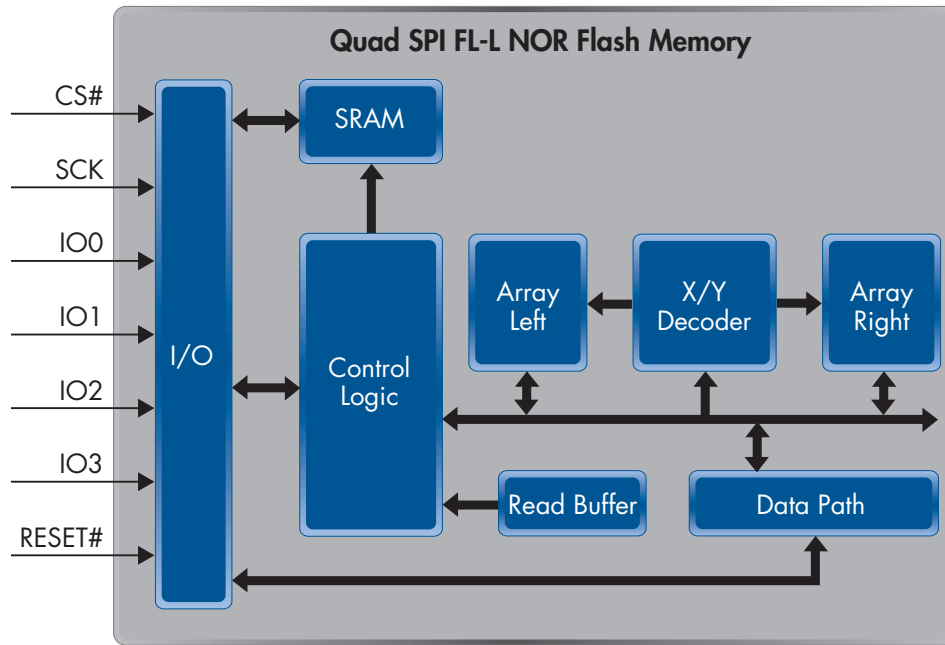
64MB TO 256MB 3.0-V QUAD SPI FL-L NOR FLASH MEMORY DEVICE PORTFOLIO

Part Number	Density	Speed	Package	Package Materials	Temperature Range
S25FL256LAGMF	256Mb	133-MHz (SDR)	16-pin SOIC	Lead (Pb)-free	I = Industrial (–40°C to +85°C) V = Industrial-plus (–40°C to +105°C) N = Extended (–40°C to +125°C)
S25FL256LAGNF			8-pin WSON	Lead (Pb)-free	
S25FL256LAGBH			24-ball BGA	Low-Halogen, Lead (Pb)-free	
S25FL256LDPMF		66-MHz (DDR)	16-pin SOIC	Lead (Pb)-free	
S25FL256LDPNF			8-pin WSON	Lead (Pb)-free	
S25FL256LDPBH			24-ball BGA	Low-Halogen, Lead (Pb)-free	
S25FL128LAGMF	128Mb	133-MHz (SDR)	8-lead SOIC	Lead (Pb)-free	
S25FL128LAGNF			8-pin WSON	Lead (Pb)-free	
S25FL128LAGBH			24-ball BGA	Low-Halogen, Lead (Pb)-free	
S25FL128LDPMF		66-MHz (DDR)	8-lead SOIC	Lead (Pb)-free	
S25FL128LDPNF			8-pin WSON	Lead (Pb)-free	
S25FL128LDPBH			24-ball BGA	Low-Halogen, Lead (Pb)-free	
S25FL064LABMF	64Mb	108-MHz (SRD) & 54-MHz (DDR)	8-lead SOIC	Lead (Pb)-free	
S25FL064LABNF			8-pin USON	Lead (Pb)-free	
S25FL064LABBH			24-ball BGA	Low-Halogen, Lead (Pb)-free	

GET STARTED NOW

To learn more about Quad SPI FL-L NOR Flash Memory products, visit www.cypress.com/NOR-Flash-FL-L

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