Low-power, Wide Vcc, NOR flash memory with fast read for code and data storage

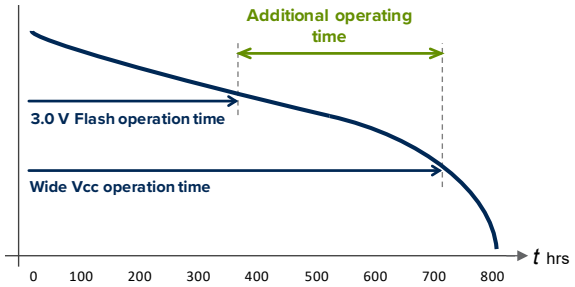
AT25FF Series

Non-volatile dual / quad memory

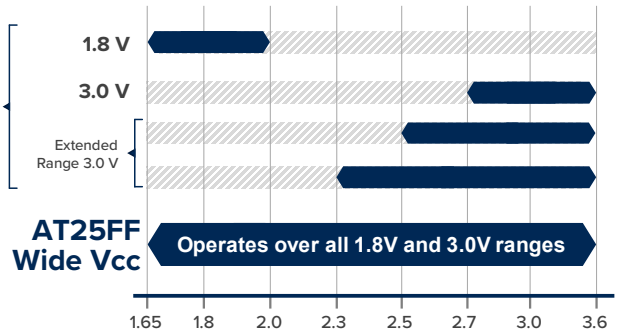
Why Wide Vcc?

IoT edge devices need memory solutions that can continue to operate as the battery discharges and the supply voltage drops. Typical memory solutions have a limited operating voltage range. This means they can not operate over the entire range of the battery, which effectively shortens the operating time between charges.

Battery voltage drops as battery discharges



Dialog developed its line of Wide Vcc components to help system designers create more reliable, smaller, and better performing IoT devices. The AT25FF offers Wide Vcc, as well as pin and functional compatibility to 1.8 V and 3.0 V devices.



Code and Data Storage

The AT25FF was designed with the performance and battery life challenges of next generation IoT in mind. It offers low-power operation as well as a high-speed SPI, dual and quad interface. This allows rapid transfer of code or data for fast booting, execute in place, AI, data transfer, or system configuration.

Fast

Typically, using a Wide Vcc memory means you have to compromise on read performance. The AT25FF family supports a high-speed interface, as well as high-speed read operations, making it ideal for code download, execute in place and rapid data transfer.

Low Power

Wide Vcc components are often used in battery operated devices where power consumption is an important consideration. The AT25FF family offers low-power read, erase, and program to help increase battery life.

Ultra-deep Power-down

With its integrated 5 nA ultra-deep power-down mode, AT25FF rivals the capabilities of external power management ICs, but reduces system design complexity and saves BOM.

Universally Compatible

No hardware change required. The AT25FF is pin and functionally compatible with existing SPI, dual, and quad 1.8 V or 3.0 V NOR flash devices.

dialog SEMICONDUCTOR

Technical Specifications

Voltage Range: 1.65 V – 3.6 V (Wide Vcc)	Density: 4 Mbit to 32 Mbit
High-speed operation: up to 133 MHz	Low-power Read, Erase, and Program
Erase program suspend resume	Hardware reset option (via HOLD pin)
Security amd One Time Programmable (OTP) registers	Software controlled reset and stop commands
Serial Peripheral Interface (SPI) • Single SPI (1-1-1) • Dual output (1-1-2) • Quad output (1-1-4) • Quad I/O with continuous fast read (1-4-4) • XiP operation (1-4-4, 0-4-4)	Power management low-power modes • Standby • Deep power-down • Ultra-deep power-down
Programming • Byte / page program (1 to 256 Bytes) • Sequential program mode capability	JEDEC compliant • Standard manufacturer and device ID • Serial Flash Discoverable Parameters (SFPD) version 1.6 • JEDEC hardware reset

Dialog Family of Wide Vcc Memory Solutions

Standard					
Single Dual Quad	AT25	DF FF	Low power, universal compatibility for code and data	Fast Read 7nA sleep (FF only)	Battery powered designs
System Enhancing					
FusionHD™	AT25	XE XV	Ultra-low power, standard 8-pin socket	Reduced system power, lower MCU overhead, 7nA sleep	Battery powered designs, data logging systems
DataFlash™	AT25 AT45	PE DB	Standard 8-pin socket Proprietary 8-pin socket	Flexible SRAM R/W, flexible page structure, dual SRAM buffers	High-efficiency, robust data logging systems

Ordering Information

		Package					
Density	Product	SOIC Wide	SOIC	DFN 5x6	USON 3x4	DFN 2x3	WLCSP
32Mbit	AT25FF321A	•	•	•	•		•
16Mbit	AT25FF161A	•	•			•	•
8Mbit	AT25FF081A	•	•			•	•
4Mbit	AT25FF041A	•	•			•	•

Applications

- Access Control / Security
- Smart Assistants
- Smart White Goods
- High-performance Wearables
- Smart Thermostats
- Medical Devices
- Industrial Automation
- Audio Subsytems
- Personal Mobile Radio

Dialog Semiconductor Worldwide Sales Offices

www.dialog-semiconductor.com email:info@diasemi.com

United Kingdom
Phone: +44 1793 757700

The Netherlands
Phone: +31 73 640 88 22

Japan
Phone: +81 3 5769 5100

Korea
Phone: +82 10 5352 0448

Germany
Phone: +49 7021 805-0

North America
Phone: +1 408 845 8500

Hong Kong
Phone: +852 3769 5200

China (Shenzhen)
Phone: +86 755 2981 3669

China (Shanghai)
Phone: +86 21 5424 9058

PBFF0221