



Multi-Purpose Flash™ (MPF™) Multi-Purpose Flash Plus (MPF+)

39 Series

Product Brief

October 2010

Product Description

Multi-Purpose Flash™ (MPF™) and Multi-Purpose Flash Plus (MPF+) make up a family of parallel flash memory products that deliver high performance, low power consumption, superior reliability and small sector size. Based on SST® SuperFlash® technology, MPF and MPF+ provide faster program, erase and read times than conventional flash, thereby saving power consumption and increasing manufacturing throughput.

In addition to offering 3V and 5V memory products, MPF and MPF+ provide 1.8V devices that deliver significant power savings compared to industry standard flash. Ideal for space-constrained applications, this family offers the industry's smallest standard packages, the XFLGA and WFBGA, both as small as 4 mm x 6 mm.



Key Features

Operating Voltages

- 1.65V-1.95V
- 2.7V-3.6V
- 4.5V-5.5V

Low Power Consumption*

- Active current: 5 mA (typical)
- Standby current: 3 µA (typical)

Fast Read Access Times*

- 45 ns
- 55 ns
- 70 ns

Fast Programming*

- 14 µs per word (typical)

Flexible Erase Capability and Fast Erase Times*

- 2 Kword Sector Erase: 18 ms (typical)
- 32 Kword Block Erase: 18 ms (typical)
- Chip Erase: 70 ms (typical)

Small Uniform Sector Sizes: 2 Kword and 32 Kword

Commercial and Industrial Operating Temperatures

Endurance: 100,000 cycles (typical)

Data Retention: 100 years (min)

MPF+ Offers Additional Features

- Erase suspend
- Boot block
- Hardware reset features

*Data varies for different devices, please refer to datasheet for details.

39 Series: Multi-Purpose Flash (MPF) Packages*

| Voltage | Density | 32-pin PDIP (PHE) | 32-pin PLCC (NHE) | 32-pin TSOP (WHE) | 34-ball WFBGA (MME) | 48-ball TFBGA (B3KE) | 48-lead TSOP (EKE) | 48-bump XFLGA (C1OE) (CAQE) | 48-ball WFBGA (M1OE) (MAQE) |
|---------|----------|-------------------|-------------------|-------------------|---------------------|----------------------|--------------------|-----------------------------|-----------------------------|
| 1.8V | 4 Mbit | | | | | • | | • | • |
| | 8 Mbit | | | | | • | | • | • |
| | 16 Mbit | | | | | • | | • | • |
| 3V | 512 Kbit | | • | • | | | | | |
| | 1 Mbit | | • | • | • | • | | | |
| | 2 Mbit | | • | • | • | • | • | | • |
| | 4 Mbit | | • | • | | • | • | • | • |
| | 8 Mbit | | | | | • | • | • | • |
| | 16 Mbit | | | | | • | • | • | • |
| | 32 Mbit | | | | | • | • | | |
| | 64 Mbit | | | | | • | • | | |
| 5V | 1 Mbit | • | • | • | | | | | |
| | 2 Mbit | • | • | • | | | | | |
| | 4 Mbit | • | • | • | | | | | |

*Wafer/Die (Known Good Die) sales of above devices are also available. Please contact SST sales for detailed information.

Applications

- Bluetooth
- GPS
- Digital TVs
- Digital Media Players, MP3 Players
- WiFi/ WIMAX
- Printers
- Digital Photo Frames
- Mobile Phones
- DSL/Cable Modems
- Servers and Routers
- Set Top Boxes
- Digital Cameras
- Industrial
- Automotive Infotainment



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| Parallel Flash Memory, 1.8V | | | | |
|-----------------------------|--------------------|------------------------------|-------------------|---|
| Device | Density | Voltage | Access Speed (ns) | Packages |
| SST39WF400B | 4 Mbit (256K x16) | 1.65-1.95V | 70 | TFBGA-48 (6 mm x 8 mm), WFBGA-48 (4 mm x 6 mm), XFLGA-48 (4 mm x 6 mm) |
| SST39WF800B | 8 Mbit (512K x16) | 1.65-1.95V | 70 | TFBGA-48 (6 mm x 8 mm), WFBGA-48 (4 mm x 6 mm), XFLGA-48 (4 mm x 6 mm) |
| SST39WF1601/1602 | 16 Mbit (1 Mb x16) | 1.65-1.95V | 70 | TFBGA-48 (6 mm x 8 mm), WFBGA-48 (4 mm x 6 mm) |
| Parallel Flash Memory, 3V | | | | |
| SST39LF/VF512 | 512 Mbit (64K x16) | LF: 3.0-3.6V VF: 2.7-3.6V | LF: 45 VF: 70 | PLCC-32, TSOP-32 (8 mm x 14 mm) |
| SST39LF/VF010 | 1 Mbit (128K x8) | LF: 3.0-3.6V VF: 2.7-3.6V | LF: 55 VF: 70 | PLCC-32, TSOP-32 (8 mm x 14 mm), TFBGA-48 (6 mm x 8 mm), WFBGA-34 (4 mm x 6 mm) |
| SST39LF/VF020 | 2 Mbit (256K x8) | LF: 3.0-3.6V VF: 2.7-3.6V | LF: 55 VF: 70 | PLCC-32, TSOP-32 (8 mm x 14 mm), TFBGA-48 (6 mm x 8 mm), WFBGA-34 (4 mm x 6 mm) |
| SST39LF/VF200A | 2 Mbit (128K x16) | LF: 3.0-3.6V VF: 2.7-3.6V | LF: 55 VF: 70 | TSOP-48 (12 mm x 20 mm), TFBGA-48 (6 mm x 8 mm), WFBGA-48 (4 mm x 6 mm) |
| SST39LF/VF040 | 4 Mbit (512K x8) | LF: 3.0-3.6V VF: 2.7-3.6V | LF: 55 VF: 70 | PLCC-32, TSOP-32 (8 mm x 14 mm), TFBGA-48 (6 mm x 8 mm) |
| SST39LF/VF400A | 4 Mbit (256K x16) | LF: 3.0-3.6V VF: 2.7-3.6V | LF: 55 VF: 70 | TSOP-48 (12 mm x 20 mm), TFBGA-48 (6 mm x 8 mm), WFBGA-48 (4 mm x 6 mm), XFLGA-48 (4 mm x 6 mm) |
| SST39LF/VF800A | 8 Mbit (512K x16) | LF: 3.0-3.6V VF: 2.7-3.6V | LF: 55 VF: 70 | TSOP-48 (12 mm x 20 mm), TFBGA-48 (6 mm x 8 mm), WFBGA-48 (4 mm x 6 mm), XFLGA-48 (4 mm x 6 mm) |
| SST39VF1601C/1602C | 16 Mbit (1 Mb x16) | 2.7-3.6V | 70 | TSOP-48 (12 mm x 20 mm), TFBGA-48 (6 mm x 8 mm), WFBGA-48 (4 mm x 6 mm) |
| SST39VF1681/1682 | 16 Mbit (2Mb x8) | 2.7-3.6V | 70 | TSOP-48 (12 mm x 20 mm), TFBGA-48 (6 mm x 8 mm) |
| SST39VF3201B/2B | 32 Mbit (2 Mb x16) | 2.7-3.6V | 70 | TSOP-48 (12 mm x 20 mm), TFBGA-48 (6 mm x 8 mm) |
| SST39VF6401B/2B | 64 Mbit (4 Mb x16) | 2.7-3.6V | 70 | TSOP-48 (12 mm x 20 mm), TFBGA-48 (8 mm x 10 mm) |
| Parallel Flash Memory, 5V | | | | |
| SST39SF010A | 1 Mbit (128K x8) | 4.5-5.5V | 55, 70 | PLCC-32, TSOP-32 (8 mm x 14 mm), PDIP-32 |
| SST39SF020A | 2 Mbit (256K x8) | 4.5-5.5V | 55, 70 | PLCC-32, TSOP-32 (8 mm x 14 mm), PDIP-32 |
| SST39SF040 | 4 Mbit (512K x8) | 4.5-5.5V | 55, 70 | PLCC-32, TSOP-32 (8 mm x 14 mm), PDIP-32 |

Functional Block Diagram



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