

# RAMTRON F-RAM Memory, State Savers & Event Recorders



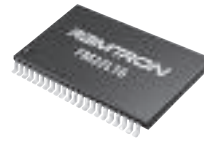
RoHS Compliant This product is RoHS compliant.

## PARALLEL F-RAM

Non-volatile Parallel High performance reads and writes with true non-volatility without the battery. All byte-wide memories have standard SRAM pinouts. They operate like SRAMs and provide non-volatile storage with no requirement for battery backup.

### Features:

- Industry standard SRAM/EEPROM pinout
- NoDelay™ Writes
- Read and write at bus speed
- High endurance
- Low standby current
- Low power consumption



RoHS Compliant LEAD-FREE

### Surface Mount Device

For quantities of 1000 and up, call for quote.

MOUSER STOCK NO.	Ramtron Part No.	Case Type	Density	Organization	Access Time (ns)	Temperature Range (°C)	Supply Voltage (V)	Price Each			
								1	25	100	500
877-FM1608-120-PG	FM1608-120-PG	PDIP-28	64K	8K x 8	120	-40 to +85	4.5 - 5.5	5.08	4.85	4.39	4.16
877-FM1608-120-SG	FM1608-120-SG	SOIC-28	64K	8K x 8	120	-40 to +85	4.5 - 5.5	5.08	4.85	4.39	4.16
877-FM1808-70-PG	FM1808-70-PG	PDIP-28	256K	32K x 8	70	-40 to +85	4.5 - 5.5	10.58	10.10	9.14	8.66
877-FM1808-70-SG	FM1808-70-SG	SOIC-28	256K	32K x 8	70	-40 to +85	4.5 - 5.5	10.58	10.10	9.14	8.66
877-FM14C88-SG	FM14C88-SG	SOIC-32	256K	32K x 8	60	-40 to +85	2.7 - 3.6	8.93	8.53	7.71	7.31
877-FM20L08-60-TG	FM20L08-60-TG	TSOP-32	1M	128K x 8	60	-40 to +85	3.135 - 3.63	22.29	21.27	19.25	18.23
877-FM20L08-60-TGC	FM20L08-60-TGC	TSOP-32	1M	128K x 8	60	0 to +70	3.135 - 3.63	22.29	21.27	19.25	18.23
877-FM21L16-60-TG	FM21L16-60-TG	TSOP-44	2M	125K x 16	60	-40 to +85	2.7 - 3.6	24.13	23.04	20.84	19.75
877-FM22L16-55-TG	FM22L16-55-TG	TSOP-44	4M	256K x 16	55	-40 to +85	2.7 - 3.6	31.55	30.11	27.25	25.81
877-FM22LD16-55-BG	FM22LD16-55-BG	BGA-48	4M	256K x 16	55	-40 to +85	2.7 - 3.6	33.79	32.26	29.18	27.65
877-FM23MLD16-60BG	FM23MLD16-60BG	BGA-48	8M	512K x 16	60	-40 to +85	2.7 - 3.6	56.10	54.44	51.65	48.19

## High-Speed Low Power

For quantities of 1000 and up, call for quote.

877-FM28V020-SG	FM28V020-SG	SOIC-28	256K	32K x 8	60	-40 to +85	2.0 - 3.6	8.93	8.53	7.71	7.31
877-FM28V100-TG	FM28V100-TG	TSOP-32	1M	128K x 8	60	-40 to +85	2.0 - 3.6	13.66	13.04	11.80	11.18

## NON-VOLATILE STATE SAVERS

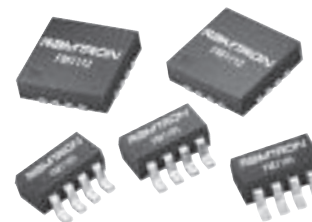
The Ramtron low-power nonvolatile state saver is a logic building block that provides continuous access to nonvolatile system settings without reading a memory. It enables storage of signals that may change frequently and without notice, and it allows the nonvolatile storage of system settings without the system overhead of serial memory. These Ramtron F-RAM based devices save the state of signals on demand and automatically restores signals to their correct state upon power up.

Ramtron nonvolatile state savers:

- Provide continuous access to nonvolatile system settings without performing a memory read operation
- Enable storage of signals that may change frequently and without notice
- Allow the nonvolatile storage of a system setting without the system overhead of a serial memory

### Features:

- 2-bit or 4-bit ferroelectric-based devices retain logic states without power
- Outputs automatically restored at power up
- Unlimited number of state changes
- As simple to use as a D-type flip-flop



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### Surface Mount Device

For quantities of 1000 and up, call for quote.

MOUSER STOCK NO.	Ramtron Part No.	Case Type	Operating Voltage (V)	Output Current (mA)	Standby Current (µA)	Max. Clock Freq. (MHz)	Propagation Delay (ns)	Temperature Range (°C)	Price Each			
									1	25	100	500
<b>Dual</b>												
877-FM1105	FM1105	SOT-23-8	5.0	10	15	1	50	-40 to +85	.92	.88	.80	.76
877-FM1106	FM1106	SOT-23-8	3.0	10	5	1	50	-40 to +85	.92	.88	.80	.76
877-FM1107	FM1107	SOT-23-8	3.0	10	0.5	1	50	-40 to +85	1.12	1.07	.97	.92
<b>Quad</b>												
877-FM1110	FM1110-QG	QFN-16	5.0	10	30	1	50	-40 to +85	1.85	1.76	1.60	1.51
877-FM1112	FM1112-QG	QFN-16	3.0	10	10	1	50	-40 to +85	1.85	1.76	1.60	1.51
877-FM1114	FM1114-QG	QFN-16	3.0	10	0.5	1	50	-40 to +85	2.22	2.12	1.92	1.82

## EVENT DATA RECORDER

The FM6124 is an Event Data Recorder with F-RAM memory that provides an integrated solution for digital events monitoring. Like PLC devices, the FM6124 provides simple device settings and data retrieval allowing easy system integration to short design-in cycle.

Access to the device is performed through an I2C interface able to sustain communication speeds up to 100Kbps. The I2C interface also provides the ability to place the FM6124 away from the host system and closer to the equipment and/or sensor it is intended to monitor. It also allows multiple devices to share the same I2C bus.

### Event Data Recorder Highlights:

#### Automatic Event Monitor

- Monitors 12 digital inputs
- Continuous monitoring for state changes
- Capable of edge detection
- Records up to 4,000

#### Interrupt Output on Events

- Buffer half full/full
- Pin change state
- Programmable high/low trip points for event and data alarms

#### RTC Alarm Timestamp & Nonvolatile Storage

- Built-in real-time clock with time base
- Schedule retained without a battery
- 24Kb nonvolatile store for user data

#### Micro Peripheral

- I2C interface to host MCU
- Reads external pins via serial interface



### Surface Mount Device

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MOUSER STOCK NO.	Ramtron Part No.	Case Type	Power Supply (V)	Event Memory (Events)	User F-RAM (kB)	RTC	PFI	Count	Communication Interface	Temperature Range (°C)	Price Each			
											1	25	100	500
877-FM6124	FM6124-QG	QFP-44	3.0 - 3.6	1000 to 4000	0 to 24	Yes	Yes	Yes	I2C	-40 to +85	26.40	25.20	22.80	21.60

Memory  
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