FRAM
MB85RS2MT (2Mbit SPI)

MB85RS2MT is a 2M-bits FRAM LSI with serial interface (SPI), using the ferroelectric process and CMOS process technologies for forming the nonvolatile memory cells. Because FRAM is able to write high-speed even though a nonvolatile memory, it is suitable for the log management and the storage of the resume data, etc.

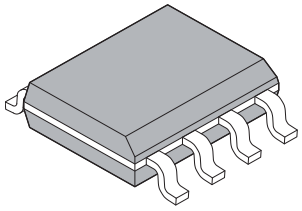
■FEATURES

- **Bit configuration** : 262,144 words × 8 bits
- **Serial Peripheral Interface** : SPI(Serial Peripheral Interface)
  Correspondent to SPI mode 0 (0,0) and mode 3 (1,1)
- **Operating frequency** : 25MHz (Max.)
- **Operating frequency (Fast Read)** : 1.8V to 2.7V 25MHz (Max.),
  2.7V to 3.6V 40MHz (Max.)
- **High endurance** : 10^{13} Read/Write per byte
- **Data retention** : 10 years (+85deg.C)
- **Operating power supply voltage** : 1.8V to 3.6V
- **Low power consumption** : Operating power supply current 10.6mA (Max@25MHz)
  Standby current 35µA (Typ) / 150µA (Max)
  Sleep mode current - / 10µA (Max)
- **Operation ambient temperature** : -40deg.C to +85deg.C
- **Package** : 8-pin plastic SOP(FPT-8P-M08)
  8-pin plastic DIP(DIP-8P-M03)
  RoHS compliant

■ORDERING INFORMATION

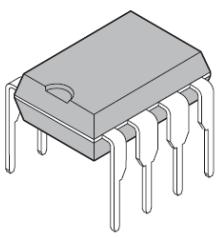
Product name	Package	Shipping form	Minimum shipping quantity
MB85RS2MTPF-G-JNE2	Plastic SOP,8-pins (FPT-8P-M08) 5.30mm×5.24mm,1.27mm pitch	Tube	1
MB85RS2MTPF-G-JNERE2		Embossed Carrier tape	2000
MB85RS2MTPH-G-JNE1	Plastic DIP,8-pins (DIP-8P-M03) 9.2mm×6.35mm,2.54mm pitch	Tube	1

■PACKAGE EXAMPLE OF REFERENCE



Plastic SOP 8-pins

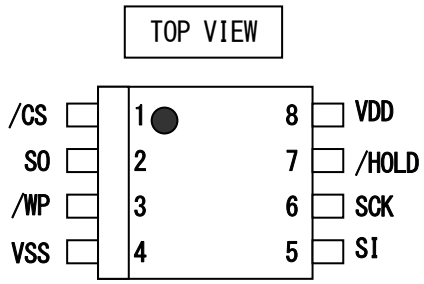
(FPT-8P-M08)



Plastic DIP 8-pins

(DIP-8P-M03)

■PIN ASSIGNMENT



Pin No.	Pin name	Description
1	/CS	Chip Select pin This is an input pin to make chips select. When /CS is the "H" level, device is in deselect (standby) status and SO becomes High-Z. Inputs from other pins are ignored for this time. When /CS is the "L" level, device is select (active) status. /CS has to be the "L" level before inputting op-code.
3	/WP	Write Protect pin This is a pin to control writing to a status register. The writing of status register is protected in related with /WP and WPEN.
7	/HOLD	Hold pin This pin is used to interrupt serial input/output without making chips deselect. When /HOLD is the "L" level, hold operation is activated, SO becomes High-Z, SCK and SI become don't care. While the hold operation, /CS has to be retained the "L" level.
6	SCK	Serial Clock pin This is a clock input pin to input/output serial data. SI is loaded synchronously to a rising edge, SO is output synchronously to a falling edge.
5	SI	Serial Data Input pin This is an input pin of serial data. This inputs op-code, address, and writing data.
2	SO	Serial Data Output pin This is an output pin of serial data. Reading data of FRAM memory cell array and status register data are output. This is High-Z during standby.
8	VDD	Supply Voltage pin
4	VSS	Ground pin

■BLOCK DIAGRAM