

FRAM

MB85RC256V

MB85RC256V is a 256K-bits FRAM with serial interface (I²C), 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.

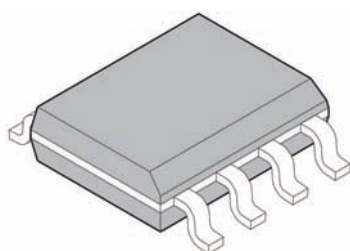
■ FEATURES

- **Bit configuration** : 32,768 words × 8 bits
- **Two-wire serial interface** : Fully controllable by two ports through serial clock (SCL) and serial data (SDA).
- **Operating frequency** : 1 MHz (Max.)
- **Read/write endurance** : 10¹² times / byte
- **Data retention** : 10 years (+ 85 °C), 95 years (+ 55 °C), over 200 years (+ 35 °C)
- **Operating power supply voltage** : 2.7V to 5.5V
- **Low power consumption** : Operating current 200μA (Max. @1MHz),
Standby current 27μA (Typ.)
- **Operation ambient temperature range** : - 40 °C to + 85 °C
- **Package** : 8-pin plastic SOP (FPT-8P-M02)
: 8-pin plastic SOP (FPT-8P-M08)
RoHS compliant

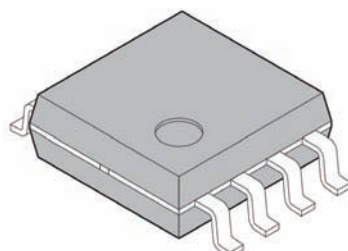
■ ORDERING INFORMATION

Product name	Package	Shipping form
MB85RC256VPNF-G-JNE1	8-pin plastic SOP (FPT-8P-M02) 3.90mm×5.05mm,1.27mm pitch	Tube
MB85RC256VPNF-G-JNERE1		Embossed Carrier tape
MB85RC256VPF-G-JNE2	8-pin plastic SOP (FPT-8P-M08) 5.30mm×5.24mm,1.27mm pitch	Tube
MB85RC256VPF-G-JNERE2		Embossed Carrier tape

■ PACKAGE EXAMPLE

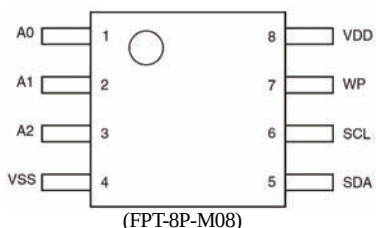
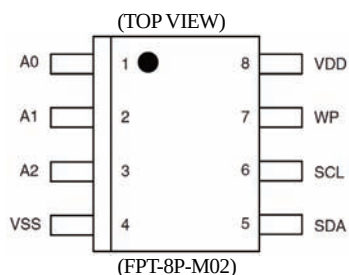


8-pin plastic SOP
(FPT-8P-M02)



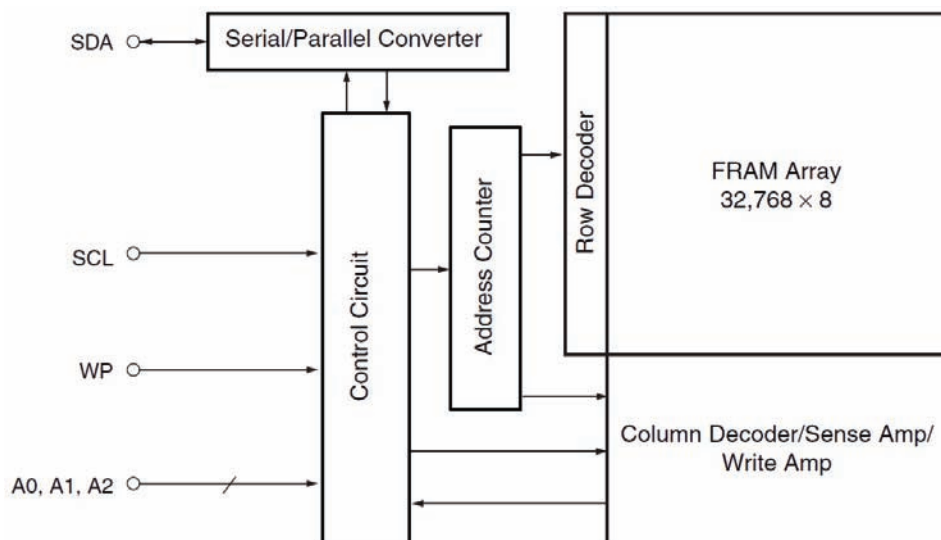
8-pin plastic SOP
(FPT-8P-M08)

■PIN ASSIGNMENT



Pin No.	Pin name	Description
1 to 3	A0 to A2	Device Address pins MB85RC256V can be connected to the same data bus up to 8 devices. Device addresses are used in order to identify each of these devices. Connect these pins to VDD pin or VSS pin externally. Only if the combination of VDD and VSS pin matches a Device Address Code inputted from the SDA pin, the device operates. In the open pin state, A0, A1 and A2 are internally pulled-down and recognized as the "L" level.
4	VSS	Ground pin
5	SDA	Serial Data I/O pin This is an I/O pin which performs bidirectional communication for both memory address and writing/reading data. It is possible to connect multiple devices. It is an open drain output, so a pull-up resistor is required to be connected to the external circuit.
6	SCL	Serial Clock pin This is a clock input pin for input/output serial data. Data is sampled on the rising edge of the clock and output on the falling edge.
7	WP	Write Protect pin When Write Protect pin is the "H" level, writing operation is disabled. When Write Protect pin is the "L" level, the entire memory region can be overwritten. Reading operation is always enabled regardless of Write Protect pin input level. The Write Protect pin is internally pulled down to VSS pin, and that is recognized as the "L" level (write enabled) when the pin is the open state.
8	VDD	Supply Voltage pin

■BLOCK DIAGRAM



■I²C

The MB85RC256V has the two-wire serial interface; the I²C bus, and operates as a slave device. The I²C bus defines communication roles of "master" and "slave" devices, with the master side holding the authority to initiate control. Furthermore, the I²C bus connection is possible where a single master device is connected to multiple slave devices in a party-line configuration. In this case, it is necessary to assign a unique device address to the slave device, the master side starts communication after specifying the slave to communicate by addresses.

