Panasonic

MN63112S

2K-Bit EEPROM

Overview

The MN63112S is a 2K-bit EEPROM supporting serial I/O and operating on a single power supply with a voltage between 1.8 and 5.5 V. It provides the following pins for easy interfacing to microprocessors or microcontrollers: chip select (CS), serial clock (SK), data input (DI), and data output (DO). It includes a built-in timer for use in automatically erasing and writing data during data update operations.

The ORG pin provides a choice of two memory organizations: 256×8 bits when ORG is connected to ground and 128×16 bits when ORG is connected to V_{CC} . An internal pull-up resistor makes the latter the default configuration.

Conversion of peripheral circuits to CMOS realizes great reductions in power consumption. Use of floating gate memory cells and a built-in error correction circuit ensures reliable operation for 10⁵ write cycles.

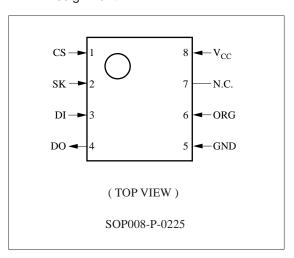
Features

- Choice of memory organizations: 256 × 8 bits and 128 × 16 bits
- Floating gate memory cells
- Function blocking erroneous writes
- Low power consumption
 - Reads: max. 6.6 mW for $V_{CC} = 3.3 \text{ V}$
 - Standby: max. 66 μ W for $V_{CC} = 3.3 \text{ V}$
- Built-in self-timer for use in automatically erasing and writing
- Built-in error correction circuit that guarantees 10⁵ write cycles
- 10-year data preservation period

Applications

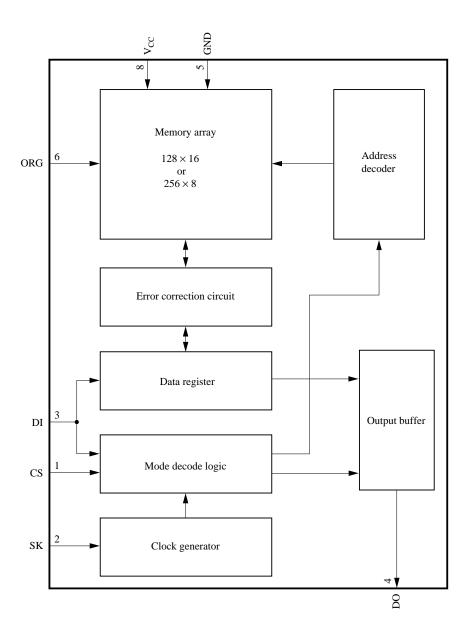
 Keyless entry systems, cordless telephones, storage for recognition and adjustment data for terminals, etc.

■ Pin Assignment



MN63112S EEPROMs

■ Block Diagram



EEPROMs MN63112S

■ Pin Descriptions

Pin No.	Symbol	Pin Name	
1	CS	Chip select	
2	SK	Serial clock	
3	DI	Data input	
4	DO	Data output	
5	GND	Ground	
6	ORG	Memory configuration selection	
7	N.C.	No connection	
8	V _{CC}	Power supply voltage	

■ Electrical Characteristics

 $V_{CC}\!\!=\!\!1.8V$ to 5.5V, Ta= $\!\!-10^{\circ}C$ to $+70^{\circ}C$

Parameter	Symbol	Test Conditions	2 to 3 V Operation		5 V Operation		Unit	
i arameter	Symbol	rest conditions	min	max	min	max	Offic	
Power supply voltage	V _{CC}		1.8	3.3	4.5	5.5	V	
Input leakage current at "L" level	I _{LIL}	ORG pin	-100	10	-150	10		
		Other pins	-10	10	-10	10	μΑ	
Input leakage current at "H" level	I_{LIH}		-10	10	-10	10	μΑ	
Output leakage current	I _{LO}		_	10	_	10	μΑ	
Input voltage at "L" level	V _{IL}		- 0.1	$0.2 \times V_{CC}$	- 0.1	0.7	V	
Input voltage at "H" level	V _{IH}		$0.8 \times V_{CC}$	V _{CC} +0.3	3.0	V _{CC} +0.3	V	
V _{CC} power supply current	I _{CC}	SK=250kHz	_	2.0	_	_	A	
(during operation)		SK=1MHz	_	_	_	3.0	mA	
V _{CC} power supply current (during standby)	I_{SB}	CS, SK, DI="L" DO = open	_	20	_	30	μΑ	
Output voltage for "L" level	V _{OL}	I _{OL} =400 μA	_	0.3	_	_	V	
(during reads)		I _{OL} =2.1mA	_	_	_	0.45		
Output voltage for "H" level (during reads)	V _{OH}	I _{OH} =-10 μA	V _{CC} - 0.3	_	_	_	V	
		I _{OH} =-100 μA	_	_	V _{CC} – 0.7	_		

■ Function Descriptions

Orders	Start	Operation	Address		Da	ata	Contents
	Bit	Code	256 × 8	128 × 16	256 × 8	128 × 16	Contents
READ	1	10	A7-A0	A6-A0			Read
WRITE	1	01	A7-A0	A6-A0	D7-D0	D15-D0	Write
EWEN	1	00	11xxxxxxxx	11xxxxxx			Enable erase/write
EWDS	1	00	00xxxxxxx	00xxxxxx			Disable erase/write

Note: x means "don't care".

MN63112S EEPROMs

■ Package Dimensions (Unit:mm)

SOP008-P-0225

