MN61113, MN61113S

2K-Bit EEPROMs

■ Overview

The MN61113 and MN61113S are 2048-bit, bit sequential EEPROMs with built-in address counters. They sequentially increment the address with the clock input to produce serial output.

They include built-in charge pump circuit and timer for automatically erasing, writing, and modifying data using only a single 3 volt power supply.

To reduce write times, they include a block write function for writing up to 32 bits at a time. This function makes it possible to rewrite the contents of all 2048 bits within 1 second (typ.).

■ Features

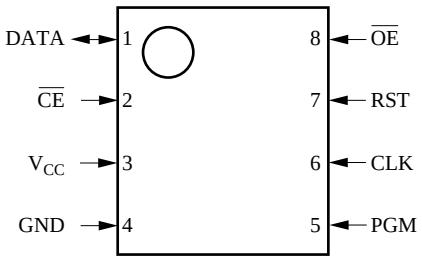
- 2048 words × 1 bit organization
- Built-in reset function
- Tristate output
- Low power consumption
  - 3 volt read: 1.5 mW (max.)
  - 3 volt program: 6 mW (max.)
  - 3 volt standby: 60 μW (max.)
- Single 3 volt power supply (charge pump circuit built in)
- Self timer for use in automatically erasing and writing data
- Built-in data polling function
- Write cycles: 10^5 times
- Data storage interval: 10 years
- Pull-up resistor on $\overline{CE}$ pin.
  Pull-down resistors on PGM, CLK, and RST pins

■ Applications

- Personal wireless equipment, cordless telephones, storage for recognition and adjustment data for terminals, etc.

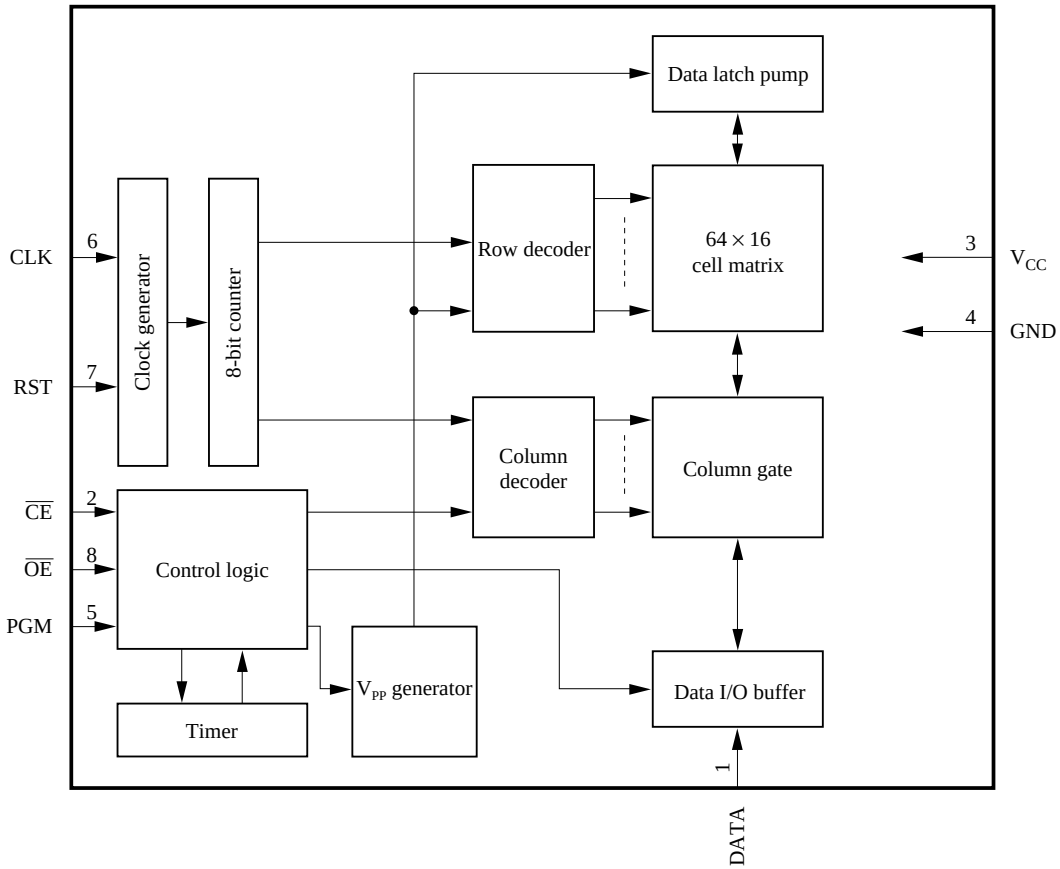
■ Pin Assignment

MN61113 DIP008-P-0300A
MN61113S SOP008-P-0225



(TOP VIEW)

■ Block Diagram



■ Pin Descriptions

Pin No.	Symbol	Pin Name
1	DATA	Data I/O
2	$\overline{CE}$	Chip enable
3	V_{CC}	Power supply voltage
4	GND	Ground
5	PGM	Program
6	CLK	Clock input
7	RST	Reset input
8	$\overline{OE}$	Output enable

■ Electrical Characteristics

V_{CC}=2.6 to 3.5V, Ta=–10˚C to +60˚C

Parameter	Symbol	Test Conditions	3 Volt Operation		Unit
			min	max	
Power supply voltage	V_{CC}	Read mode	2.6	3.5	V
		Program mode	3.0	3.5	
"L" level input leakage current	I_{LIL}	$\overline{CE}$ pin	–50	—	µA
		Other pins	–10	10	
"H" level input leakage current	I_{LIH}	PGM, CLK, and RST pins	—	–20	µA
		Other pins	–10	10	
Output leakage current	I_{LO}		—	10	µA
"L" level input voltage	V_{IL}		– 0.1	0.2 V_{CC}	V
"H" level input voltage	V_{IH}		0.8 V_{CC}	V_{CC} +0.3	V
V_{CC} power supply current (during operation)	I_{CC}	Read mode CLK;f=250kHz	—	500	µA
		Program mode	—	2000	
V_{CC} power supply current (during standby)	I_{SB}	$\overline{CE}$ = V_{CC}+ 0.3 V; RST and PGM pins at V_{CC}; CLK pin open	—	20	µA
"L" level output voltage	V_{OL}	I_{OL}=400µA	—	0.3	V
"H" level output voltage	V_{OH}	I_{OH}=10µA	V_{CC} – 0.3	—	V

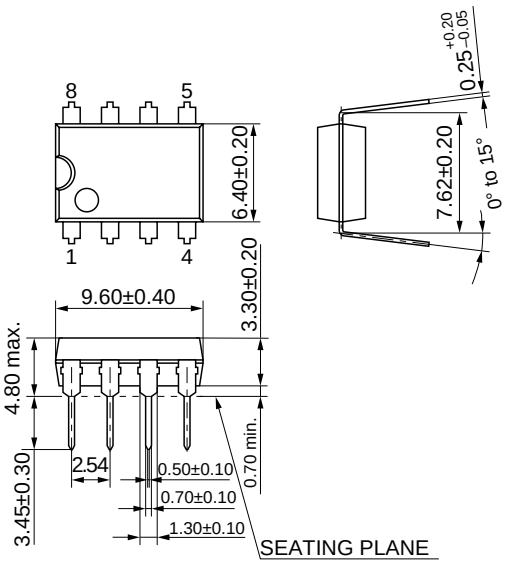
■ Function Descriptions

Operating Modes

Pin Symbol (Pin No.) / Operating Mode	$\overline{CE}$ (2)	$\overline{OE}$ (8)	PGM (5)	DATA (1)
Read	V_{IL}	V_{IL}	×	D_{OUT}
Standby	V_{IH}	×	×	High-impedance
Program	V_{IL}	V_{IH}	⎍	D_{IN}

■ Package Dimensions (Unit:mm)

● MN61113 DIP008-P-0300A



● MN61113S SOP008-P-0225