

1Kbyte Embedded EEPROM with configuration 64p8w16bit
OVERVIEW

180SMIC_EEPROM_08 is a nonvolatile electrically erasable programmable read-only memory (EEPROM)

with volume 1 Kbyte (16(bit per word) x 8(words per page) x 64(pages)) with single-bit output data and parallel write data in one word.

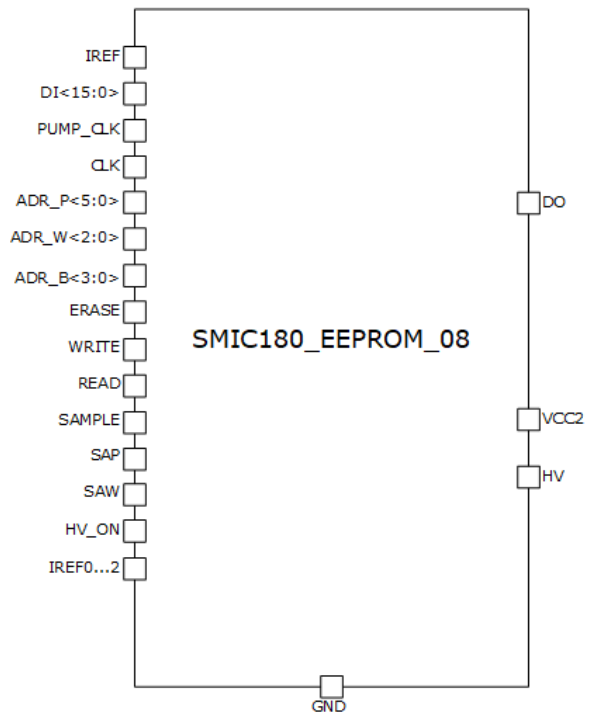
Write EEPROM page data comes to input DI<15:0> and write process execute if signal WRITE = "1".

Data DI<15:0>, page address ADR_P <5:0>, word address in page ADR_W <2:0> cannot be changed until the end of the writing process. Data reading is carried out by specifying the page address ADR_P <5:0> and the address of the word in the page ADR_W <2:0>, as well as the reading bit in the word ADR_B <3:0>. After applying the reading strobe, the DO signal is set at the output corresponding to the reading data from the corresponding addresses of the EEPROM cell. Memory is optimized for usage in the industrial and commercial applications, requiring low power consumption and supply voltage.

IP technology: SMIC EEPROM CMOS 0.18um

IP status: silicon proven

Area: 0.177mm²


ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Condition	Value			Unit	
			min	typ.	max		
Low level supply voltage	V _{dd}	-	1.0	1.2	1.8	V	
Operating temperature range	T _j	-	-40	+27	+90	°C	
Clock frequency for power supply generators	F _{clk}	-	400	500	600	kHz	
Clock frequency for power supply generators for programing	F _{clk_pump}	-	800	1000	1200	kHz	
Reference current	I _{ref}	-	40	50	60	nA	
Access time	t _{acc}	V _{dd} from 1.0 to 1.8V	100	150	350	ns	
Current consumption in read mode (F _{clk} = 512kHz and F _{clk_pump} = 1MHz)	I _{read}	T=+27°C, tt corner	V _{dd} =1.0V	-	0.8	-	uA
			V _{dd} =1.2V	-	1.0	-	uA
			V _{dd} =1.5V	-	1.3	-	uA
			V _{dd} =1.8V	-	1.6	-	uA
	All corners, all temperatures	V _{dd} =1.0V	0.6	-	2.2	uA	
		V _{dd} =1.2V	0.8	-	2.6	uA	
		V _{dd} =1.5V	1.1	-	3.1	uA	
		V _{dd} =1.8V	1.4	-	3.8	uA	
Current consumption in write mode (F _{clk} = 512kHz and F _{clk_pump} = 1MHz)	I _{write}	T=+27°C, tt corner	V _{dd} =1.0V	-	5.2	14.7	uA
			V _{dd} =1.2V	-	6.3	18.5	uA
			V _{dd} =1.5V	-	8.1	23.3	uA
			V _{dd} =1.8V	-	10.0	28.5	uA
Standby current	I _{stand}	Exclude IREF	-	-	0.1	uA	
High Level Input Voltage	V _{IH}	For digital inputs	0.7*V _{dd}	-	-	V	
Low Level Input Voltage	V _{IL}		-	-	0.3	V	