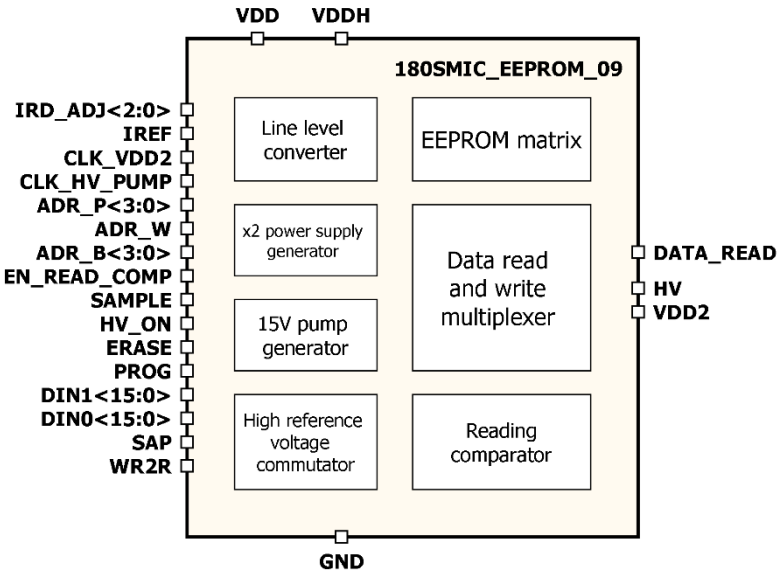
512bit EEPROM IP with configuration 16p2w16bit

OVERVIEW

180SMIC_EEPROM_09 is a nonvolatile electrically erasable programmable read-only memory (EEPROM) with volume 512 bits which is organized as 16 pages of 2 words by 16 bit with single-bit output data and parallel write data. Data writing in EEPROM consists of 2 phases - erasing and programming. Data to be written in EEPROM are applied to din1<15:0>, din0<15:0> inputs. Erasing words of a page is performed by setting to "1" the signal hv_on, with the signal erase is at state "1". Data din1<15:0>, din0<15:0>, page address adr_p<3:0> and word address in page adr_w must not be changed throughout the whole cycle of erasing (i.e. while hv_on = "1"). Words are programmed when the signal hv_on= "1" and the signal PROG= "1". Data reading is performed using the sample signal. 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: pre-silicon verification
Total area: 0.058mm^2

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Condition	Value			Unit
			min	typ.	max	
Supply voltage	V_{dd}	Write mode	1.1	1.2	1.8	V
		Read mode	0.7	1.2	1.8	V
	V_{ddH}	Write mode	1.1	1.2	1.8	V
		Read mode	-	-	-	
Operating temperature range	Tj	-	-40	+27	+125	°C
Clock frequency for power supply generators	F_{clk}	-	-	0.5	-	MHz
Clock frequency for power supply generators for programing	F_{clk_pump}	-	-	1	-	MHz
Reference current	I_{ref}	-	-	50	-	nA
Access time	t_{acc}	-	70	170	225	ns
		V_{dd} = 0.7V	-	170	350	
		V_{dd} = 0.6V	-	225	-	
Active pulse width of HV_ON signal	t_{hv_on}	-	1	2	-	ms
Current consumption in read mode	I_{read}	-	0.85	1	2.85	uA
		V_{dd} = 0.6V	-	0.55	-	
Average current consumption in write mode	I_{write_avg}	-	2.9	3.6	11.0	uA
Peak current consumption in write mode	I_{write_peak}	-	7.7	18.3	42.6	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