2048bits EEPROM IP with configuration 16p8w16bit

OVERVIEW

130GF_EEPROM_05 is a nonvolatile electrically erasable programmable read-only memory (EEPROM) with volume 2048bit, which is organized as 16 pages of 8 words by 16 bits with single-bit output data and parallel write data in one word. Data writing is performed by setting data at DI<15:0>, page address at ADR_P<3:0>, word address in the page at ADR_W<2:0>, and then applying WR="1". Writing process finishes with setting flag ready to "1". Data reading is carried out by specifying page address at ADR_P<3:0>, word address in the page at ADR_W<2:0>, bit address in the word at ADR_B<3:0>, and then applying the reading comparator strobe SAMPLE="1". The read bit appears at pin do after some delay. Memory is optimized for usage in the industrial and commercial applications, requiring low power consumption and supply voltage. Data to be write are set at data input pin DI<15:0>. Writing process starts, when signal WR goes to "1". Data DI<15:0>, page address ADR_P<3:0>, word address in page ADR_W<2:0> are latched into internal registers and cannot be changed until the end of the writing process. At the end of the writing, the RD = "1" flag is set.

IP technology: Global Foundries Embedded EEPROM 0.13 um.

IP status: silicon proven

Total area: 0.08mm^2
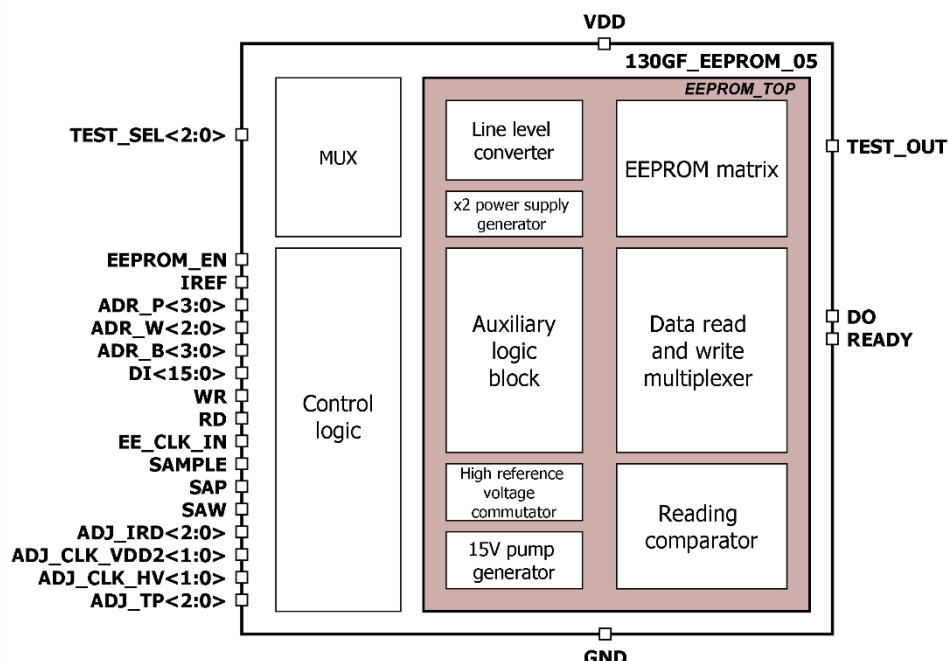
ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Supply voltage	V_{dd}	-	1.1	1.2	1.5	V
Operating temperature range	T	-	-40	+27	+85	°C
Reference current	I_{ref}	-	-	50	-	nA
EEPROM size	S	-	-	2048	-	bit
Clock frequency	F_{clk}	-	-	2	-	MHz
Time of writing process of one word	t_{wr}	-	-	4.1	-	ms
Read setup time relative to read signal	T_{READS}	-	10	-	-	us
Current consumption in read mode	I_{read}	-	1.6	2	3.5	uA
Average current consumption in write mode	I_{write}	-	7.5	10.0	22.0	uA
High level input voltage	V_{IH}	For digital inputs	$0.7V_{dd}$	-	-	V
Low level input voltage	V_{IL}	For digital inputs	-	-	0.3	V