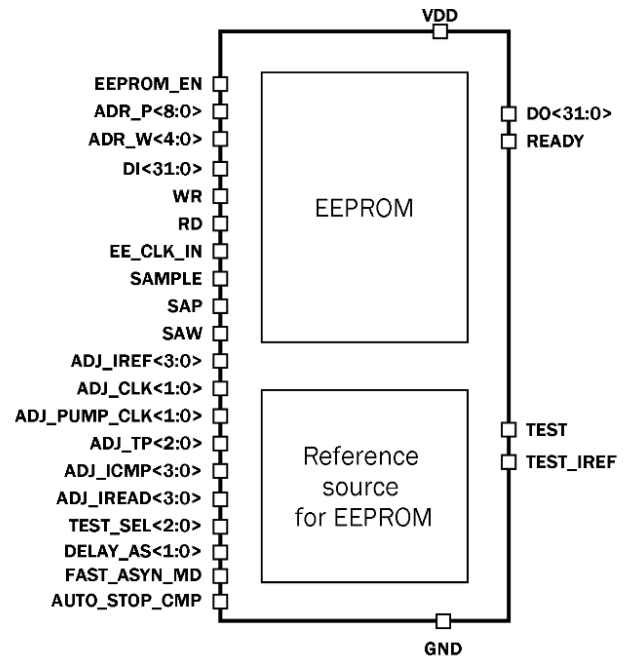


36Kbyte EEPROM IP with configuration 288p32w32bit

OVERVIEW

The block is a nonvolatile electrically erasable programmable read-only memory (EEPROM) with volume 36Kbyte (32(bit per word) x 32(words per page) x 288(pages)) with parallel write/read data in one word. Write EEPROM page data comes to input **DI<31:0>** and write process execute if signal **WR = "1"**. Data **DI<31:0>**, page address **ADR_P<8:0>**, word address in page **ADR_W<4:0>** are latched into internal registers and cannot be changed until the end of the writing process. At the end of the writing, the **READY = "1"** flag is set. Data reading is carried out by specifying the page address **ADR_P<8:0>** and the address of the word in the page **ADR_W<4:0>**. After applying the reading strobe, the **DO<31:0>** 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: Global Foundries Embedded EEPROM 0.13um

IP status: silicon proven

Total area: 2.33mm²

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Condition	Value			Unit
			min	typ.	max	
Supply voltage	V _{dd}	–	1.1	1.2	1.3	V
Operating temperature range	T	–	-40	+27	+85	°C
EEPROM size	S	–	–	36	–	Kbyte
Input clock frequency	F _{in}	–	–	8	–	MHz
Access time	t _{acc}	Fclk=8M with Tsp=10ns Tsw=5ns	–	25*	38*	ns
Programming time of writing process of one word	t _{wr}	Fclk=8M, AdjTP="010"	–	2.1	–	ms
Read setup time relative to read signal	t _{reads}	Fclk=8M	–	20	–	us
Current consumption in read mode	I _{read}	With read 1M word per sec Fclk=1M	–	250*	330*	uA
		With read 1M word per sec Fclk=8M	–	–	360*	
		With read 8M word per sec Fclk=8M	–	280*	380*	uA
Average current consumption in write mode	I _{write_avg}	Average for 1 programming cycle Fclk=8M	–	–	0.4	mA
Peak current consumption in write mode	I _{write_peak}	Fclk=8M	–	–	1	mA
Standby current	I _{standby}	–	–	–	10	uA
Input logic-high level	V _{IH}	For digital inputs	0.7*V _{dd}	–	–	V
Input logic-low level	V _{IL}		–	–	0.3	V

***Note:** Parameters are presented based on simulations of partial extractions. Later, the parameters will be refined based on the measurement results of the circuit.