11.16 RRAMC Electrical specification

11.16.1 RRAM programming

Symbol	Description	Min.	Typ.	Max.	Units
$n_{ENDURANCE}$	Number of times a 128-bit word line can be written	10000			
$t_{WRITE,UNBUFFERED}$	Time to write a 32-bit word using unbuffered write		65		µs
$t_{WRITE,WRITEBUFSIZE=1}$	Average time to write a 32-bit word in a stream of sequentially address ordered writes, using WRITEBUFSIZE=1		22		µs

11.17 SAADC Electrical specification

11.17.1 SAADC Electrical Specification

Symbol	Description	Min.	Typ.	Max.	Units
DNL_{10}	Differential non-linearity, 10-bit resolution	1	<3		LSB11b
V_{OS}	Differential offset error (calibrated), 10-bit resolution [a]	-5	0	5	LSB10b
f_{SAMPLE}	Maximum sampling rate			2000	kHz
$f_{BW,NS1}$	Input signal bandwidth for NOISESHAPE=NS1			45	kHz
$f_{BW,NS2}$	Input signal bandwidth for NOISESHAPE=NS2			7	kHz
$t_{ACQ,2k}$	Acquisition time (configurable), source Resistance <= 2kOhm		0.25		µs
$t_{ACQ,10k}$	Acquisition time (configurable), source Resistance <= 10kOhm		0.5		µs
$t_{ACQ,20k}$	Acquisition time (configurable), source Resistance <= 20kOhm		1		µs
$t_{ACQ,40k}$	Acquisition time (configurable), source Resistance <= 40kOhm		2		µs
$t_{ACQ,100k}$	Acquisition time (configurable), source Resistance <= 100kOhm		5		µs
$t_{ACQ,200k}$	Acquisition time (configurable), source Resistance <= 200kOhm		10		µs
$t_{ACQ,400k}$	Acquisition time (configurable), source Resistance <= 400kOhm		20		µs
$t_{ACQ,800k}$	Acquisition time (configurable), source Resistance <= 800kOhm		40		µs
t_{CONV}	Conversion time		0.5		µs
$E_{G2/5}$	Error[b] for Gain = 2/5	-1		1	%
$E_{G1/2}$	Error[b] for Gain = 1/2	-1		1	%
E_{G1}	Error[b] for Gain = 1	-1		1	%
E_{G2}	Error[b] for Gain = 2	-1		1	%
R_{INPUT}	Input resistance for input frequencies in range 0-200 kHz		735		kΩ
R_{INPUT}	Input resistance for input frequencies in range 200 kHz - 1 MHz	157			kΩ
E_{NOB}	Effective number of bits, differential mode, 12-bit resolution, 1/1 gain, 250 ns acquisition time, HFXO, 2 Msps		9		Bit
S_{NDR}	Peak signal to noise and distortion ratio, differential mode, 12-bit resolution, 1/1 gain, 250 ns acquisition time, HFXO, 2 Msps		56		dB
S_{FDR}	Spurious free dynamic range, differential mode, 12-bit resolution, 1/1 gain, 250 ns acquisition time, HFXO, 2 Msps		60		dBc

[a] Digital output code at zero volt differential input.
[b] Does not include temperature drift