

Analog IP

12bit 2MSps SAR ADC

Key Features

- Conversion method : Successive approximation
- Resolution : 12bit
- Conversion time : 0.5 μ s
- Differential nonlinearity : -1LSB(Min.)/+2LSB(Max.)
- Integral nonlinearity : -4LSB(Min.)/+4LSB(Max.)
- Supply voltage: VCCA=1.8+/-0.15V
- Analog Input range : 0 to VCCA, single-ended.
- 14ch analog inputs multiplexer included.

Technology

Process : TSMC CLN28HPC+

Electrical characteristics

Item	Unit	Spec			Description
		MIN	TYP	MAX	
Analog operating voltage (VCCA)	V	1.65	1.8	1.95	
Digital operating voltage (VDD)	V	0.9	1.0	1.08	
Reference voltage (VREF)	V	VCCA	-	VCCA	
Junction temperature (Tj)	°C	-40	25	125	
Resolution	bits	-	-	12	
Clock frequency (ADCLK)	MHz	50	108	113	
Analog input range (Vin)	V	0		VREF	Single ended
Analog input channel number	n	-	-	14	
Conversion rate (Fconv)	Msp/s	-	-	2	ADCLK=108MHz
Conversion time (Tconv)	μ s	0.5	-	-	ADCLK=108MHz
Integral Non-Linearity (INL)	LSB	-4	-	+4	
Differential Non-Linearity (DNL)	LSB	-1	-	+2	
Absolute accuracy (Abs)	LSB	-16	-	+16	
Power consumption (Icc)	mA	-	-	1	ADCLK=108MHz, VCCA pin

*This IP is contract design IP. Please contact for detail.

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