

Data Converter Datasheet

12bit 2MSps SAR ADC

Key Features

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

Technology

- Process : TSMC CLN28HPC+
- Available metallization technologies :5X2Y2R_UT+AP-RDL.

Electrical characteristics

Item	Unit	Spec			Description
		MIN	TYP	MAX	
Analog operating voltage (V_{CCA})	V	1.65	1.8	1.95	
Digital operating voltage (V_{DD})	V	0.9	1.0	1.08	
Reference voltage (V_{REF})	V	V_{CCA}	-	V_{CCA}	
Junction temperature (T_j)	°C	-40	25	125	
Resolution	bits	-	-	12	
Clock frequency (ADCLK)	MHz	50	108	113	
Analog input range (V_{in})	V	0		V_{REF}	Single ended
Analog input channel number	n	-	-	14	
Conversion rate (F_{conv})	MSPS	-	-	2	ADCLK=108MHz
Conversion time (T_{conv})	us	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 (I_{cc})	mA	-	-	1	ADCLK=108MHz, V_{CCA} pin

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