

## 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 ( $F_{conv}$ )	Msp/s	-	-	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.*