

Analog IP Cell

8Bit Analog Digital Converter

SARADC8 XC06

General Description

This successive approximation analog to digital converter transforms input voltages to a digital data word within 500ns with a resolution of 8Bit. It has been used multiple times in a variety of IC developments.

Ratings, Parameters and Conditions

Parameter / Condition	Symbol	Min	Typ.	Max	Unit	Comment
Electrical Parameters						
Supply voltage	V_{dda}	4.75	5	5.25	V	
Operating Temperature	T_{range}	-20		85	°C	
Supply current	I_{dda}		2		mA	
Resolution	N		8		Bit	
Reference current	I_{ref}		50		µA	
Reference voltage	V_{ref}		V_{dda}		V	
Duration of conversion	T_{conv}		500		ns	
Differential linearity error	ADC_{DNL}		0.3	0.5	LSB	
Integral linearity error	ADC_{INL}		0.3	0.5	LSB	
Output Impedance	R_{Out}			75	kOhm	
Absolute Maximum Ratings						
Storage Temperature	T_{range}	-40		125	°C	
Supply Voltage	V_{dd}	-0.3		7	V	
Input Voltage	V_{in}	-0.3		$V_{dd}+0.7$		
Output Voltage	V_{out}	-0.3		$V_{dd}+0.7$		

IO-Description

Interface	I/O	Function	Comment
CLK	Input	digital clock	
POR	Input	power on reset	
SOC	Input	start conv.	
EOC	Output	end of conv.	
Vref	Input	reference voltage	
Vin	Input	input voltage	
Out[7..0]	Output	ADC result	
GND, GNDA, VDD	Input	voltage supply	

Symbol

