

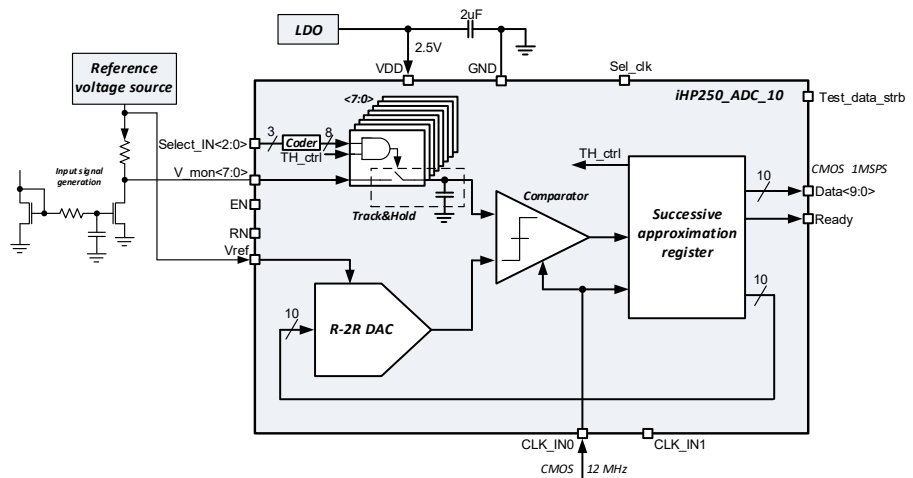
10-bit 1-channel 1 MSPS SAR ADC
OVERVIEW

250iHP_ADC_09 is 10-bit 1 MSPS ADC employs high-performance single ended successive approximation architecture with embedded 8-input signal multiplexer. The ADC operates with sampling rate 1 MSPS and corresponding input clock 12 MHz. The ADC supports standby mode and features low power consumption, compact area.

IP technology: iHP SiGe BiCMOS 0.25 μm .

IP status: pre-silicon verification.

Area: 0.06 mm^2 .


ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			Min	Typ	Max	
Operating temperature range	T_j	-	0	+27	+85	$^{\circ}\text{C}$
Supply voltage	V_{DD}	-	2.38	2.5	2.62	V
Reference voltage	V_{REF}	-	-	2.5	V_{DD}	V
Current consumption	I_{DD}	Standby mode	185	230	280	μA
	I_{SD}	Active mode	3	7	200	nA
Power consumption	P_{TOTAL}	V_{REF} tied to V_{DD}	0.39	0.52	0.68	mW
Input capacitance	C_{IN}	-	3.7	4.2	4.5	pF
Clock frequency	FCLK	-	12	-	12000	kHz
Sample rate	FS	-	1	-	1000	kSPS
Resolution	N	-	-	10	-	bit
Effective number of bits	ENOB	-	9.3	9.5	9.7	bit
Spurious free dynamic range	SFDR	-	62	67	74	dB
Differential non-linearity	DNL	-	-	-	± 0.6	LSB
Input voltage range	V_{MON}	-	0	-	V_{REF}	V
Clock Input Duty Cycle	S	-	45	50	55	%
Clock Signal Period Jitter	T_{JIT}	-	-	-	100	pS
Input logic high level	V_{IH}	Digital inputs and clock	0.9 V_{DD}	-	V_{DD}	V
Input logic low level	V_{IL}		0	-	0.3	V