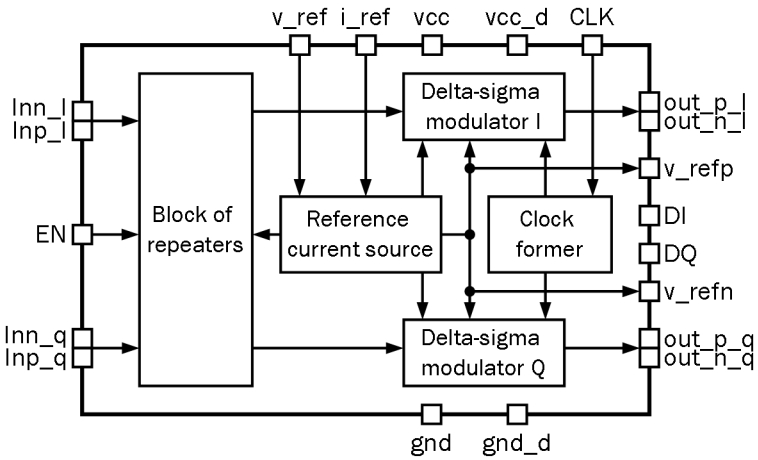
12-bit 2-channel 2.2 MSPS and up to 8.5 MHz bandwidth delta-sigma ADC

OVERVIEW

180XFAB_ADC_01 is a second order delta-sigma 2-channel (I/Q) analog-to-digital converter that supports bandwidth up to 8.5 kHz and oversampling ratio 128. This structure is based on the principle of switch capacitors and consists of two differential channels.
IP technology: iHP SiGe BiCMOS 0.25 um.
IP status: silicon proven.
Area: 0.49mm^2.



ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Supply voltage	V_{cc}	-	1.7	2.2	2.3	V
Digital supply voltage	V_{cc_d}	-	1.7	2.2	2.3	V
Operating temperature range	T	-	-40	+27	+85	°C
Current consumption	I_{CC}	For one channel	430	450	455	uA
Resolution	N	-	-	12	-	bit
Input signal frequency	F_{IN}	-	0.0	-	8.5	kHz
Bandwidth	BW	-	-	8.5	-	kHz
Sampling rate	F_S	-	-	2.2	-	MSPS
Oversampling rate	OSR	-	-	128	-	-
Input reference voltage	V_{REF+}	-	1.18	1.29	1.37	V
	V_{REF-}		0.86	0.96	1.05	V
Peak-to-peak differential input voltage	A_{INp-p}	-	560	-	640	mV
DC operating point	U	-	1.05	1.134	1.250	V
Signal - noise ratio	SNR	With an amplitude closed to the maximum (2.5 dB)	-	62	-	dB
Dynamic range	SFDR	-	-	50	-	dB
Noise figure	P_{NOISE}	In the bandwidth with full amplitude ($V_{REF+} - V_{REF-}$)	-	-53	-	dB
Intermodulation immunity*	α_{IM}	Limited by SNR, there is no intermodulation peak	62	-	-	dB
Input logic-high level	V_{IH}	For digital inputs	0.7*V_{cc_d}	-	V_{cc_d}+0.25	V
Input logic-low level	V_{IL}		-0.25	-	0.3	V

*Two tones are located at 20 kHz and 35 kHz offset frequencies from the center frequency of 5 kHz.