

ADP1110—SPECIFICATIONS (@ T_A = +25°C, V_{IN} = 1.5 V, unless otherwise noted)

Parameter	Conditions ¹	V _S	ADP1110			Units
			Min	Typ	Max	
QUIESCENT CURRENT*	Switch Off	I _Q	300			μA
INPUT VOLTAGE*	Step-Up Mode	V _{IN}	1.15		12.6	V
	Step-Down Mode		1.0		30	V
COMPARATOR TRIP POINT VOLTAGE*	ADP1110 ¹		210	220	230	mV
OUTPUT SENSE VOLTAGE*	ADP1110-5 ²	V _{OUT}	4.75	5.00	5.25	V
	ADP1110-12 ²		11.4	12.00	12.6	V
COMPARATOR HYSTERESIS*	ADP1110		4	8		mV
OUTPUT HYSTERESIS*	ADP1110-5		90	180		mV
	ADP1110-12		200	400		mV
OSCILLATOR FREQUENCY*		f _{OSC}	52	70	90	kHz
DUTY CYCLE*	Full Load (V _{FB} < V _{REF})	DC	62	69	78	%
SWITCH ON TIME*		t _{ON}	7.5	10	12.5	μs
FEEDBACK PIN BIAS CURRENT*	ADP1110 V _{FB} = 0 V	I _{FB}	70	150		nA
SET PIN BIAS CURRENT*	V _{SET} = V _{REF}	I _{SET}	100	300		nA
A0 OUTPUT LOW*	I _{A0} = 300 μA V _{SET} = 150 mV	V _{A0}	0.15	0.4		V
REFERENCE LINE REGULATION*	1.0 V ≤ V _{IN} ≤ 1.5 V		0.35	1.0		%/V
	1.5 V ≤ V _{IN} ≤ 12 V		0.05	0.1		%/V
SWITCH SATURATION VOLTAGE* STEP-UP MODE	V _{IN} = 1.5 V, I _{SW} = 400 mA	V _{CESAT}	300	400		mV
	V _{IN} = 1.5 V, I _{SW} = 500 mA		400	550		mV
	V _{IN} = 5 V, I _{SW} = 1 A		700	1000		mV
A2 ERROR AMP GAIN*	R _L = 100 kΩ ³	A _v	1000	5000		V/V
REVERSE BATTERY CURRENT	(Note 4)	I _{REV}	750			mA
CURRENT LIMIT	220 Ω Between I _{LIM} and V _{IN}		400			mA
CURRENT LIMIT TEMPERATURE COEFFICIENT			-0.3			%/°C
SWITCH-OFF LEAKAGE CURRENT	Measured at SW1 Pin	I _{LEAK}	1	10		μA
MAXIMUM EXCURSION BELOW GND	I _{SW1} ≤ 10 μA, Switch Off	V _{SW2}	-400	-350		mV

NOTES

*Denotes the specifications that apply over the full operating temperature range.

¹This specification guarantees that both the high and low trip point of the comparator fall within the 210 mV to 230 mV range.

²This specification guarantees that the output voltage of the fixed versions will always fall within the specified range. The waveform at the sense pin will exhibit a saw-tooth shape due to the comparator hysteresis.

³100 kΩ resistor connected between a 5 V source and the A0 pin.

⁴The ADP1110 is guaranteed to withstand continuous application of +1.6 V applied to the GND and SW2 pins while V_{IN}, I_{LIM}, and SW1 pins are grounded.

Specifications subject to change without notice.

This information applies to a product under development. Its characteristics and specifications are subject to change without notice. Analog Devices assumes no obligation regarding future manufacture unless otherwise agreed to in writing.