

ELECTRICAL CHARACTERISTICS

The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at $T_A = 25^\circ\text{C}$ (Note 2). $V_{IN} = 12\text{V}$, $V_{EN/UVLO} = 1.5\text{V}$ unless otherwise noted.

PARAMETER	CONDITIONS		MIN	TYP	MAX	UNITS
Control Inputs/Outputs						
EN/UVLO Shutdown Threshold		●	0.3	0.6	1.0	V
EN/UVLO Enable Threshold	Falling	●	1.196	1.220	1.244	V
EN/UVLO Enable Hysteresis				13		mV
EN/UVLO Hysteresis Current	$V_{EN/UVLO} = 0.3\text{V}$ $V_{EN/UVLO} = 1.1\text{V}$ $V_{EN/UVLO} = 1.3\text{V}$		-0.1	0	0.1	μA
			2.2	2.5	2.8	μA
			-0.1	0	0.1	μA
CTRL Input Bias Current	$V_{CTRL} = 0.75\text{V}$, Current Out of Pin		0	20	50	nA
CTRL Latch-Off Threshold	Falling	●	285	300	315	mV
CTRL Latch-Off Hysteresis				25		mV
Load Switch Driver						
LOADEN Threshold	Rising	●	1.3	1.4	1.5	V
LOADEN Hysteresis				220		mV
Minimum V_{OUT} for LOADTG to be On	$V_{LOADEN} = 5\text{V}$			2.4	3	V
LOADTG On Voltage $V_{(V_{OUT}-LOADTG)}$	$V_{OUT} = 12\text{V}$		4.6	5	5.4	V
LOADTG Off Voltage $V_{(V_{OUT}-LOADTG)}$	$V_{OUT} = 12\text{V}$		-0.1	0	0.1	V
LOADEN to LOADTG Turn On Propagation Delay	$C_{LOADTG} = 3.3\text{nF}$ to V_{OUT} , 50% to 50%			90		ns
LOADEN to LOADTG Turn Off Propagation Delay	$C_{LOADTG} = 3.3\text{nF}$ to V_{OUT} , 50% to 50%			40		ns
LOADTG Turn On Fall Time	$C_{LOADTG} = 3.3\text{nF}$ to V_{OUT} , 10% to 90%			300		ns
LOADTG Turn Off Rise Time	$C_{LOADTG} = 3.3\text{nF}$ to V_{OUT} , 90% to 10%			10		ns
Error Amplifier						
Full Scale Current Regulation $V_{(ISP-ISN)}$	$V_{CTRL} = 2\text{V}$, $V_{ISP} = 12\text{V}$ $V_{CTRL} = 2\text{V}$, $V_{ISP} = 0\text{V}$	●	97	100	103	mV
		●	97	100	103	mV
1/10th Current Regulation $V_{(ISP-ISN)}$	$V_{CTRL} = 0.35\text{V}$, $V_{ISP} = 12\text{V}$ $V_{CTRL} = 0.35\text{V}$, $V_{ISP} = 0\text{V}$	●	8	10	12	mV
		●	8	10	12	mV
ISMON Monitor Output V_{ISMON}	$V_{(ISP-ISN)} = 100\text{mV}$, $V_{ISP} = 12\text{V}/0\text{V}$ $V_{(ISP-ISN)} = 10\text{mV}$, $V_{ISP} = 12\text{V}/0\text{V}$ $V_{(ISP-ISN)} = 0\text{mV}$, $V_{ISP} = 12\text{V}/0\text{V}$	●	1.20	1.25	1.30	V
		●	0.30	0.35	0.40	V
		●	0.20	0.25	0.30	V
ISP/ISN Input Common Mode Range		●	0		60	V
ISP/ISN Low Side to High Side Switchover Voltage	$V_{ISP} = V_{ISN}$			1.8		V
ISP/ISN High Side to Low Side Switchover Voltage	$V_{ISP} = V_{ISN}$			1.7		V
ISP Input Bias Current	$V_{LOADEN} = 5\text{V}$, $V_{ISP} = V_{ISN} = 12\text{V}$ $V_{LOADEN} = 5\text{V}$, $V_{ISP} = V_{ISN} = 0\text{V}$ $V_{EN/UVLO} = 0\text{V}$, $V_{ISP} = V_{ISN} = 12\text{V}$ or 0V			23		μA
				-10		μA
				0		μA
ISN Input Bias Current	$V_{LOADEN} = 5\text{V}$, $V_{ISP} = V_{ISN} = 12\text{V}$ $V_{LOADEN} = 5\text{V}$, $V_{ISP} = V_{ISN} = 0\text{V}$ $V_{EN/UVLO} = 0\text{V}$, $V_{ISP} = V_{ISN} = 12\text{V}$ or 0V			23		μA
				-10		μA
				0		μA
ISP/ISN Current Regulation Amplifier g_m				2000		μS
FB Regulation Voltage	$V_C = 1.2\text{V}$	●	0.985	1.00	1.015	V
FB Line Regulation	$V_{IN} = 4\text{V}$ to 60V			0.2	0.5	%
FB Load Regulation				0.2	0.8	%
FB Voltage Regulation Amplifier g_m				660		μS
FB Input Bias Current	FB in Regulation, Current Out of Pin			10	40	nA
V_C Output Impedance				10		$\text{M}\Omega$
V_C Standby Leakage Current	$V_C = 1.2\text{V}$, $V_{LOADEN} = 0\text{V}$		-10	0	10	nA