

ELECTRICAL CHARACTERISTICS The ● denotes the specifications which apply over the full operating junction temperature range, otherwise specifications are at $T_A = 25^\circ\text{C}$. $V_{IN} = 12\text{V}$, $V_{EN/UVLO} = 5\text{V}$ unless otherwise noted.

PARAMETER	CONDITIONS		MIN	TYP	MAX	UNITS
PWM Pin Threshold (Falling Edge)			1.4	1.5	1.6	V
PWM Pin Hysteresis				675		mV
CTRL1 Pin Current	$V_{CTRL1} = 1.5\text{V}$			20		nA
CTRL2 Pin Current	$V_{CTRL1} = 1.5\text{V}$, $V_{CTRL2} = 1.5\text{V}$, $V_{FBIN} = 2\text{V}$			100		nA
Reference						
Reference Voltage (V_{REF} pin)		●	1.94	2	2.06	V
Inductor Current Sensing						
Full Range SENSE ⁺ to SENSE ⁻	$V_{CTRL1} = 2\text{V}$, $V_{CTRL2} > 2\text{V}$, $V_{SS} = V_{FBIN} = 2\text{V}$, $V_C = 1.2\text{V}$	●	48	51	54	mV
SENSE ⁺ Pin Current	$V_{SENSE^+} = V_{SENSE^-} = 4\text{V}$			-20		μA
SENSE ⁻ Pin Current	$V_{SENSE^+} = V_{SENSE^-} = 4\text{V}$, $V_{CTRL1} = 1.5\text{V}$			-40		μA
Internal V_{CC} Regulator (INTV_{CC} Pin)						
Regulation Voltage	$I_{LOAD} = 10\text{mA}$	●	4.8	5	5.2	V
Current Limit	$V_{INTVCC} = 0\text{V}$			60		mA
NMOS FET Driver						
Non-Overlap Time TG to BG				42		ns
Non-Overlap Time BG to TG				44		ns
Minimum On-Time BG	(Note 4)			50		ns
Minimum On-Time TG	(Note 4)			55		ns
Minimum Off-Time BG	(Note 4)			140		ns
High Side Driver Switch On-Resistance	$V_{CBOOST} - V_{SW} = 5\text{V}$					Ω
Gate Pull-Up				2.2		Ω
Gate Pull-Down				1.3		Ω
Low Side Driver Switch On-Resistance	$V_{INTVCC} = 5\text{V}$					Ω
Gate Pull-Up				2.2		Ω
Gate Pull-Down				1		Ω
Switching Frequency	$R_T = 40\text{k}\Omega$ $R_T = 221\text{k}\Omega$	●	930 180	1000 200	1070 220	kHz kHz
Soft-Start						
Charging Current				11		μA
Voltage Regulation Amplifier						
Input Bias Current	$V_{FB} = 1.3\text{V}$			750		nA
I_m				850		$\mu\text{A/V}$
Feedback Regulation Voltage	$V_{SENSE^+} = V_{SENSE^-} = V_{CTRL1} = 2\text{V}$	●	1.188	1.206	1.224	V
FAULT Comparator						
Upper FAULT Threshold (FB Rising)		●	1.137	1.16	1.183	V
Upper FAULT Threshold Hysteresis				40		mV
Lower FAULT Threshold (FB Falling)		●	0.24	0.25	0.26	V
Lower FAULT Threshold Hysteresis				40		mV
FAULT Pull-Down Current	$V_{FAULT} = 2\text{V}$, $V_{FB} = 0\text{V}$			8		mA
Input Voltage Regulation						
FBIN Pin Current	$V_{FBIN} = 1.5\text{V}$			150		nA
Sense Voltage	$V_{FBIN} = 1.22\text{V}$, $V_{SENSE^-} = 4\text{V}$			10		mV
($V_{SENSE^+} - V_{SENSE^-}$)	$V_{FBIN} = 1.26\text{V}$, $V_{SENSE^-} = 4\text{V}$			45		mV

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