

LTM4630-1 Data Sheet Comparison

LTM4630-1 Electrical Characteristics

LTM4630-1

ELECTRICAL CHARACTERISTICS The ● denotes the specifications which apply over the specified internal operating temperature range. Specified as each individual output channel. $T_A = 25^\circ\text{C}$ (Note 2), $V_{IN} = 12\text{V}$ and V_{RUN1} , V_{RUN2} at 5V unless otherwise noted. Per the typical application in Figure 25.

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	
V_{IN}	Input DC Voltage		● 4.5		15	V	
V_{OUT}	Output Voltage		● 0.6		1.8	V	
$V_{OUT1(DC)}$, $V_{OUT2(DC)}$	Output Voltage, Total Variation with Line and Load	$C_{IN} = 22\mu\text{F} \times 3$, $C_{OUT} = 100\mu\text{F} \times 1$ Ceramic, 470 μF POSCAP, $R_{FB} = 40.2\text{k}\Omega$ $V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$, $I_{OUT} = 0\text{A}$ to 18A A-Grade (0.8%) B-Grade (1.5%)	● 1.488 ● 1.477	1.5	1.512 1.523	V	
Input Specifications							
V_{RUN1} , V_{RUN2}	RUN Pin On/Off Threshold	RUN Rising		1.1	1.25	1.40	V
$V_{RUN1HYS}$, $V_{RUN2HYS}$	RUN Pin On Hysteresis				150		mV
$I_{INRUSH(VIN)}$	Input Inrush Current at Start-Up	$I_{OUT} = 0\text{A}$, $C_{IN} = 22\mu\text{F} \times 3$, $C_{SS} = 0.01\mu\text{F}$, $C_{OUT} = 100\mu\text{F} \times 3$, $V_{OUT1} = 1.5\text{V}$, $V_{OUT2} = 1.5\text{V}$, $V_{IN} = 12\text{V}$			1		A
$I_{Q(VIN)}$	Input Supply Bias Current	$V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$, Burst Mode® Operation $V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$, Pulse-Skipping Mode $V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$, Switching Continuous Shutdown, $RUN = 0$, $V_{IN} = 12\text{V}$			3 15 65 50		mA mA mA μA
$I_S(VIN)$	Input Supply Current	$V_{IN} = 5\text{V}$, $V_{OUT} = 1.5\text{V}$, $I_{OUT} = 18\text{A}$ $V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$, $I_{OUT} = 18\text{A}$			6 2.6		A A
Output Specifications							
$I_{OUT1(DC)}$, $I_{OUT2(DC)}$	Output Continuous Current Range	$V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$ (Note 7)		0		18	A
$\Delta V_{OUT1(LINE)}/V_{OUT1}$ $\Delta V_{OUT2(LINE)}/V_{OUT2}$	Line Regulation Accuracy	$V_{OUT} = 1.5\text{V}$, V_{IN} from 4.5V to 15V $I_{OUT} = 0\text{A}$ for Each Output.	●		0.01	0.03	%/V
$\Delta V_{OUT1}/V_{OUT1}$ $\Delta V_{OUT2}/V_{OUT2}$	Load Regulation Accuracy	For Each Output, $V_{OUT} = 1.5\text{V}$, 0A to 18A $V_{IN} = 12\text{V}$ (Note 7)					%
		A-Grade B-Grade	● ●		0.1 0.2	0.3 0.5	% %
$V_{OUT1(AC)}$, $V_{OUT2(AC)}$	Output Ripple Voltage	For Each Output, $I_{OUT} = 0\text{A}$, $C_{OUT} = 100\mu\text{F} \times 3$ / X7R/Ceramic, 470 μF POSCAP, $V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$, Frequency = 450kHz			15		mV _{p-p}
f_S (Each Channel)	Output Ripple Voltage Frequency	$V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$, $f_{SET} = 1.25\text{V}$ (Note 4)			500		kHz
f_{SYNC} (Each Channel)	SYNC Capture Range			400		780	kHz
					Change to 750		
$\Delta V_{OUTSTART}$ (Each Channel)	Turn-On Overshoot	$C_{OUT} = 100\mu\text{F}/\text{X5R}/\text{Ceramic}$, 470 μF POSCAP, $V_{OUT} = 1.5\text{V}$, $I_{OUT} = 0\text{A}$, $V_{IN} = 12\text{V}$			10		mV
t_{START} (Each Channel)	Turn-On Time	$C_{OUT} = 100\mu\text{F}/\text{X5R}/\text{Ceramic}$, 470 μF POSCAP, No Load, TRACK/SS with 0.01 μF to GND, $V_{IN} = 12\text{V}$			5		ms
$\Delta V_{OUT(LS)}$ (Each Channel)	Peak Deviation for Dynamic Load	Load: 0% to 25% to 0% of Full Load $C_{OUT} = 5 \times 220\mu\text{F}$ Ceramic $V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$			83		mV
t_{SETTLE} (Each Channel)	Settling Time for Dynamic Load Step	Load: 0% to 25% to 0% of Full Load, $V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$, $C_{OUT} = 5 \times 220\mu\text{F}$ Ceramic			40		μs
$I_{OUT(PK)}$ (Each Channel)	Output Current Limit	$V_{IN} = 12\text{V}$, $V_{OUT} = 1.5\text{V}$			30		A

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