

1	ACDC_LinkSwitch-TN_042413; Rev.2.6; Copyright Power Integrations 2007	INPUT	INFO	OUTPUT	UNIT	LinkSwitch-TN_Rev_2-6.xls: LinkSwitch-TN Design Spreadsheet
2	INPUT VARIABLES					Customer
3	VACMIN	85			Volts	Minimum AC Input Voltage
4	VACMAX	265			Volts	Maximum AC Input Voltage
5	FL	60			Hertz	Line Frequency
6	VO	12.00			Volts	Output Voltage
7	IO	0.100			Amps	Output Current
8	EFFICIENCY (User Estimate)	75.00				Overall Efficiency Estimate (Adjust to match Calculated, or enter Measured Efficiency)
9	EFFICIENCY (Calculated Estimate)			0.71		Calculated % Efficiency Estimate
10	CIN	2.20		2.20	uF	Input Filter Capacitor
11	Input Stage Resistance			0.00	ohms	Input Stage Resistance, Fuse & Filtering
12	Ambient Temperature	30		30	deg C	Operating Ambient Temperature (deg Celsius)
13	Switching Topology			Buck		Type of Switching topology
14	Input Rectification Type	H	▼	H		Choose H for Half Wave Rectifier and F for Full Wave Rectification
15						
16	DC INPUT VARIABLES					
17	VMIN	85.0		85.0	Volts	Minimum DC Bus Voltage
18	VMAX	265.0		265.0	Volts	Maximum DC Bus Voltage
19						
20	LinkSwitch-TN					
21	LinkSwitch-TN	LNK304	▼	LNK304		Selected LinkSwitch-TN. Ordering info - Suffix P/G indicates DIP 8 package; suffix D indicates SO8 package; second suffix N indicates lead free RoHS compliance
22	ILIMIT			0.257	Amps	Typical Current Limit
23	ILIMIT_MIN			0.240	Amps	Minimum Current Limit

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24	ILIMIT_MAX			0.275	Amps	Maximum Current Limit
25	FSMIN			62000	Hertz	Minimum Switching Frequency
26	VDS			11.4	Volts	Maximum On-State Drain To Source Voltage drop
27	PLOSS_LNK			0.27	Watts	Estimated LinkSwitch-TN losses
28						
29	DIODE					
30	VD			0.70	Volts	Freewheeling Diode Forward Voltage Drop
31	VRR			400	Volts	Recommended PIV rating of Freewheeling Diode
32	IF			1	Amps	Recommended Diode Continuous Current Rating
33	TRR			75	ns	Recommended Reverse Recovery Time
34	Diode Recommendation			UF4005		Suggested Freewheeling Diode
35						
36	OUTPUT INDUCTOR					
37	L_TYP			12.7	uH	Required value of Inductance to deliver Output Power (Includes device and inductor tolerances) Choose next higher standard available value
38	L	680		680	uH	Output Inductor, Recommended Standard Value
39	L_R	9.0		9.0	Ohms	DC Resistance of Inductor
40	OPERATING MODE			MDCM		Mostly Discontinuous Conduction Mode (at VMIN)
41	KL_TOL			1.15		Inductor tolerance Factor. Accounts for basic (10% - 20%) Manufacturing Tolerances $1.1 < KL_TOL < 1.2$ See AN-37 for detailed explanation
42	K_LOSS			50.333		Loss factor. Accounts for "off-state" power loss to be supplied by inductor Calculated efficiency $< K_LOSS < 1$. See AN-37 for detailed explanation

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43	ILRMS			0.12	Amps	Estimated RMS inductor current (at VMAX)
44						
45	OUTPUT CAPACITOR					
46	DELTA_V	0.06		0.06	Volts	Target Output Voltage Ripple
47	MAX_ESR			250	m-Ohms	Maximum Capacitor ESR (milli-ohms)
48	I RIPPLE			0.24	Amps	Output Capacitor Ripple current
49						
50	FEEDBACK COMPONENTS					
51	RBIAS			2.00	k-Ohms	Bias Resistor. Use closest standard 1% value
52	RFB			11.86	k-Ohms	Feedback Resistor. Use closest standard 1% value
53	CFB			10	uF	Feedback Capacitor
54	C_SOFT_START			1 - 10	uF	If the output Voltage is greater than 12 V, or total output and system capacitance is greater than 100 uF, a soft start capacitor between 1uF and 10 uF is recommended. See AN-37 for details
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