

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	INPUT	INFO	OUTPUT
2	INPUT VARIABLES					Customer			
3	VACMIN	85			Volts	Minimum AC Input Voltage	85		
4	VACMAX	265			Volts	Maximum AC Input Voltage	265		
5	FL	50			Hertz	Line Frequency	50		
6	VO	12.00			Volts	Output Voltage	12.00		
7	IO	0.100			Amps	Output Current	0.100		
8	EFFICIENCY (User Estimate)	0.72				Overall Efficiency Estimate (Adjust to match Calculated, or enter Measured Efficiency)	0.72		
9	EFFICIENCY (Calculated Estimate)			0.74		Calculated % Efficiency Estimate			0.77
10	CIN			3.30	uF	Input Filter Capacitor			3.30
11	Input Stage Resistance			0.00	ohms	Input Stage Resistance, Fuse & Filtering			0.00
12	Ambient Temperature			50	deg C	Operating Ambient Temperature (deg Celsius)			50
13	Switching Topology			Buck		Type of Switching topology			Buck
14	Input Rectification Type	F ▼		F		Choose H for Half Wave Rectifier and F for Full Wave Rectification	F ▼		F
15									
16	DC INPUT VARIABLES								
17	VMIN			85.9	Volts	Minimum DC Bus Voltage			85.9
18	VMAX			374.8	Volts	Maximum DC Bus Voltage			374.8
19									
20	LinkSwitch-TN								
21	LinkSwitch-TN	Auto ▼		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	LNK305 ▼		LNK305
22	ILIMIT			0.257	Amps	Typical Current Limit			0.375
23	ILIMIT_MIN			0.240	Amps	Minimum Current Limit			0.350
24	ILIMIT_MAX			0.275	Amps	Maximum Current Limit			0.401
25	FSMIN			62000	Hertz	Minimum Switching Frequency			62000
26	VDS			11.4	Volts	Maximum On-State Drain To Source Voltage drop			8.3
27	PLOSS_LNK			0.31	Watts	Estimated LinkSwitch-TN losses			0.24
28									
29	DIODE								
30	VD			0.70	Volts	Freewheeling Diode Forward Voltage Drop			0.70
31	VRR			600	Volts	Recommended PIV rating of Freewheeling Diode			600
32	IF			1	Amps	Recommended Diode Continuous Current Rating			1
33	TRR			75	ns	Recommended Reverse Recovery Time			75
34	Diode Recommendation			UF4005		Suggested Freewheeling Diode			UF4005
35									
36	OUTPUT INDUCTOR								
37	L_TYP			788.3	uH	Required value of Inductance to deliver Output Power (Includes device and inductor tolerances) Choose next higher standard available value			373.7
38	L			820	uH	Output Inductor, Recommended Standard Value	820		820
39	L_R			2.0	Ohms	DC Resistance of Inductor			2.0

Manuell von 470µH auf 820µH gesetzt.

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40	OPERATING MODE			MDCM		Mostly Discontinuous Conduction Mode (at VMIN)			MDCM
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			1.15
42	K_LOSS			0.813		Loss factor. Accounts for "off-state" power loss to be supplied by inductor Calculated efficiency < K_LOSS < 1. See AN-37 for detailed explanation			0.813
43	ILRMS			0.12	Amps	Estimated RMS inductor current (at VMAX)			0.15
44									
45	OUTPUT CAPACITOR								
46	DELTA_V			0.12	Volts	Target Output Voltage Ripple			0.12
47	MAX_ESR			500	m-Ohms	Maximum Capacitor ESR (milli-ohms)			343
48	I_RIPPLE			0.24	Amps	Output Capacitor Ripple current			0.35
49									
50	FEEDBACK COMPONENTS								
51	RBIAS			2.00	k-Ohms	Bias Resistor. Use closest standard 1% value			2.00
52	RFB			11.86	k-Ohms	Feedback Resistor. Use closest standard 1% value			11.86
53	CFB			10	uF	Feedback Capacitor			10
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			1 - 10