1	ACDC_LinkSwitch-PL-Buck_031512; Rev.1.1; Copyright Power Integrations 2011	INPUT	INFO	OUTPUT	UNIT	ACDC_LinkSwitch-PL Buck Design Spreadsheet
2	**ENTER APPLICATION VARIABLES**					**Design Title**
3	VACMIN			185.00	V	Minimum AC Input Voltage
4	VACTYP			230.00	V	Typical AC Input Voltage
5	VACMAX			265.00	V	Maximum AC Input Voltage
6	FL			50.00	Hz	AC Mains Frequency. (between 47Hz and 63Hz)
7	VOMIN			18.90	V	Minimum Output Voltage of LED string
8	VO	21.00		21.00	V	Output Voltage of LED string
9	VOMAX			23.10	V	Maximum Output Voltage of LED string
10	IO	0.33		0.33	A	Output Current riving LED strings
11	PO			6.93	W	Continuous Output Power
12	n			0.80		Efficiency Estimate at output terminals. Under 0.7 if no better data available
13	Dimming Application	**No**		No		Enter Yes if design uses TRIAC dimming, otherwise select No
14						
15						
16						
17	**ENTER LinkSwitch-PL VARIABLES**					
18	Chosen Device	**LNK460**		LNK460		Chosen LinkSwitch-II device
19	ILIMITMIN			1.64	A	Minimum Current Limit
20	ILIMITTYP			1.86	A	Typical Current Limit
21	ILIMITMAX			2.08	A	Maximum Current Limit
22	TON			1.56	us	Expected on-time of MOSFET at low line and PO
23	FSW		Warni	77.82	kHz	Device operating below minimum recommeded frequency at VACMAX. Consider increasing the indcutance value
24	Duty Cycle			12.17	%	Expected operating duty cycle at low line and PO
25	IRMS			0.16	A	Worst case drain RMS current at VO
26	IPK			1.46	A	Worst case peak primary current at VO
27	KDP		Info	0.65		LinkSwitch-PL must operate in discontinuous mode (KP > 1) for good power factor. Consider reducing the primary inductance.
28						
29						
30						
31	**ENTER INDUCTOR CORE/CONSTRUCTION VARIABLES**					
32	**Core Type**					
33	Core Type	**RM6S**		RM6S		Enter Transformer Core
34	Core Part Number			-		If custom core is used - Enter part number here
35	Bobbin part number			CSV-RM6/R-1S-4P		Bobbin Part number (if available)
36	AE			31.00	mm^2	Core Effective Cross Sectional Area
37	LE			27.30	mm	Core Effective Path Length
38	AL			2100.00	nH/tur	Ungapped Core Effective Inductance
39	BW			6.40	mm	Bobbin Physical Winding Width
40						
41						
42	**INDUCTOR DESIGN PARAMETERS**					
43	LPMIN			297.00	uH	Minimum Inductance
44	LPTYP	330.00		330.00	uH	Typical inductance
45	LP_TOLERANCE			10.00	%	Tolerance of the inductance
46	TURNS_TOTAL			72.00	Turns	Total number of turns
47	ALG			63.66	nH/tur	Gapped Core Effective Inductance
48	BM			2375.23	Gauss	Calculated Worst Case Maximum Flux Density (BM < 3000 G)

1	ACDC_LinkSwitch-PL-Buck_031512; Rev.1.1; Copyright Power Integrations 2011	INPUT	INFO	OUTPUT	UNIT	ACDC_LinkSwitch-PL Buck Design Spreadsheet
49	BP			3387.67	Gauss	Calculated Worst Case Peak Flux Density (BP < 3400 G)
50	BAC			1187.62	Gauss	AC Flux Density for Core Loss Curves (0.5 X Peak to Peak)
51	ur			147.17		Relative Permeability of Ungapped Core
52	LG			0.59	mm	Gap Length (Lg > 0.1 mm)
53						
54	AWG			28.00		Winding Wire Gauge (Rounded to next smaller standard AWG value)
55	L			4.11		Number of Layers
56	CMA			220.68	Cmils	Current Density capacity 200 < CMA < 500
57						
58	**Bias Section**					
59	Use Bias?	**Auto**		Yes		Is a Bias winding used?
60	TURNS_BIAS			9.00	Turns	
61	VBIAS			12.00	V	
62	PIVBS			46.85	V	
63						
64						
65	**CURRENT WAVEFORM SHAPE PARAMETERS**					
66	DMAX			12.17	%	Duty cycle measured at minimum input voltage
67	IAVG			0.04	A	Input average current measured on the Mosfet at the minimum input voltage
68	IP			1.46	A	Peak Drain current at maximum input voltage
69	ISW_RMS			0.16	A	MOSFET RMS current measured at the minimum input voltage
70	ID_RMS			0.71	A	RMS current of freewheeling diode at maximum input voltage
71	IL_RMS			0.73	A	RMS current of the inductor at the maximum input voltage
72						
73						
74	**FEEDBACK AND BYPASS PIN PARAMETERS**					
75	RFEEDBACK			1.01	ohm	This is a first approximation for the sense resistor and will likely require fine tuning in the bench. Value calculated with typical inductance, and minimum input voltage.
76	CBP			1.00	uF	Minimum Bypass pin capacitor required
77						
78						
79						
80	**VOLTAGE STRESS PARAMETERS**					
81	VDRAIN			374.77	V	Estimated worst case drain voltage
82	PIVS			374.77	V	Output Rectifier Maximum Peak Inverse Voltage