A	B	C	D	E	F
DCDC_DPASwitch_Flyback_022306; Rev.2.11; Copyright Power Integrations 2006	INPUT	INFO	OUTPUT	UNITS	DPASwitch_Flyback_022306 - Continuous/Discontinuous mode Spreadsheet. Copyright 2006 Power Integrations
ENTER APPLICATION VARIABLES					**DC-DC Converter**
VDCMIN	16.00			Volts	
VDCMAX	32.00			Volts	Maximum DC Input Voltage
VO	5.00			Volts	Output Voltage (main)
PO	10.00	*Comment*		Watts	Verify temperature rise for continuous power. P and G packages may be thermally limited
n	0.80				Efficiency Estimate
Z			0.7		Loss Allocation Factor, (0.7 Recommended)
VB	14.00			Volts	Bias Voltage (Recommended between 12V and 18V)
UV AND OV PARAMETERS					
		min	max		
VUVOFF		13.4	14.6	Volts	Minimum undervoltage On-Off threshold
VUVON		14.2	15.2	Volts	Maximum undervoltage Off-On threshold (turn-on)
VOVON		31.0	-	Volts	Minimum overvoltage Off-On threshold
VOVOFF			38.8	Volts	Maximum overvoltage On-Off threshold (turn-off)
RL			243.9	k-Ohms	
ENTER DPASWITCH VARIABLES					
DPASWITCH	**DPA425P**			*16VDC*	*36 VDC*
Chosen Device	*DPA425P*		Power O	*22W*	*52W*
ILIMITMAX	4.65	5.35		Amps	From DPASWITCH Data Sheet
Frequency	**F**				Enter 'F' for fS = 400KHz and 'L' for fS = 300KHz
fS	375000			Hertz	DPASWITCH Switching Frequency
VOR	30.00		30	Volts	Reflected Output Voltage
KI	0.80		0.8		Current Limit Reduction Factor
ILIMITEXT			3.72	Amps	Minimum External Current limit
RX			9.5	k-Ohms	Resistor from X pin to source to set external current limit
VDS	1.00			Volts	DPASWITCH on-state Drain to Source Voltage
VD	0.70			Volts	Output Winding Diode Forward Voltage Drop
VDB	0.70			Volts	Bias Winding Diode Forward Voltage Drop
KRP/KDP	0.40				Ripple to Peak Current Ratio (0.2 < KRP < 1.0 : 1.0< KDP<6.0)
ENTER TRANSFORMER CORE/CONSTRUCTION VARIABLES					
Core Type	**EFD25**				
Core Manuf					
Bobbin Manuf					
Core		EFD25		*P/N:*	*EFD25-3F3-Exxx-xx*
Bobbin		EFD25_Bobbin		*P/N:*	*CSH-EFD25-1S-10P*
AE			0.58	cm^2	Core Effective Cross Sectional Area
LE			5.7	cm	Core Effective Path Length
AL			2000	nH/T^2	Ungapped Core Effective Inductance
BW			16.4	mm	Bobbin Physical Winding Width
M	0.00			mm	Distance)
L	1.00				Number of Primary Layers
NS	5				Number of Secondary Turns
CURRENT WAVEFORM SHAPE PARAMETERS					
DMAX			0.67		Maximum Duty Cycle
IAVG			0.78	Amps	Average Primary Current
IP			1.46	Amps	Peak Primary Current
IR			0.59	Amps	Primary Ripple Current
IRMS			0.97	Amps	Primary RMS Current
TRANSFORMER PRIMARY DESIGN PARAMETERS					
LP			46	uHenries	Primary Inductance
NP			26		Primary Winding Number of Turns
NB			13		Bias Winding Number of Turns
ALG			66	nH/T^2	Gapped Core Effective Inductance
BP			1112	Gauss	Peak Flux density during transients (Limit to 3000 Gauss)
BM			438	Gauss	Maximum Flux Density
BAC			88	Gauss	AC Flux Density for Core Loss Curves (0.5 X Peak to Peak)
ur			1564		Relative Permeability of Ungapped Core
LG			1.07	mm	Gap Length (Lg >> 0.051 mm)
BWE			16.4	mm	Effective Bobbin Width
TRANSFORMER SECONDARY DESIGN PARAMETERS					
ISP			7.71	Amps	Peak Secondary Current
ISRMS			3.60	Amps	Secondary RMS Current
IO			2.00	Amps	Power Supply Output Current
IRIPPLE			2.99	Amps	Output Capacitor RMS Ripple Current
VOLTAGE STRESS PARAMETERS					
VDRAIN			115	Volts	Maximum Drain Voltage (Includes Effect of Leakage Inductance)
PIVS			11	Volts	Output Rectifier Maximum Peak Inverse Voltage

A	B	C	D	E	F
PIVB			30	Volts	Bias Rectifier Maximum Peak Inverse Voltage
ADDITIONAL OUTPUTS					
V_OUT2				Volts	2nd Output Voltage
VD_OUT2				Volts	2nd Output - Diode Forward voltage
N_OUT2			0.00		2nd Output - Turns
PIV_OUT2			0	Volts	2nd Output - Diode Peak Inverse Voltage
V_OUT3				Volts	3rd Output Voltage
VD_OUT3				Volts	3rd Output - Diode Forward voltage
N_OUT3			0.00		3rd Output - Turns
PIV_OUT3			0	Volts	3rd Output - Diode Peak Inverse Voltage
I_OUT2				Amps	2nd Output - Output Current
I_OUT3				Amps	3rd Output - Output Current
Negative Output			N/A		If negative output exists enter Output number; eg: If VO2 is negative output, enter 2