Power Supply Input

Var	*Value*	*Units*	*Description*
VACMIN	**85**	V	Minimum Input AC Voltage
VACMAX	**265**	V	Maximum Input AC Voltage
FL	**50**	Hz	Line Frequency
TC	**2.69**	ms	Diode Conduction Time
Z	**0.50**		Loss Allocation Factor (Manual Overwrite)
η	**80.0**	%	Efficiency Estimate
VMIN	**87.4**	V	Minimum DC Input Voltage
VMAX	**374.8**	V	Maximum DC Input Voltage

Input Section

Var	*Value*	*Units*	*Description*
Fuse	**2.00**	A	Input Fuse Rated Current
IAVG	**1.44**	A	Average Diode Bridge Current (DC Input Current)
Thermistor	**5.00**	Ω	Input Thermistor

Device Variables

Var	*Value*	*Units*	*Description*
Device	**TOP270EG**		PI Device Name (Manual Overwrite)
BVDSS	**725**		Drn-Src Bkdn Voltage
Device Mode	**Default**		Current Limit mode for device
OVP_FLAG	**NO**		Output Overvoltage Protection Enabled
PO	**100.57**	W	Total Continuous Output Power
PO_PEAK	**100.57**	W	Total Peak Output Power
PO_AVG	**100.57**	W	Total Average Output Power
VDRAIN Estimated	**589.26**	V	Actual Estimated Drain Voltage
VDS	**10.00**	V	On state Drain to Source Voltage (Manual Overwrite)
FS	**132000**	Hz	Switching Frequency
KP	**0.60**		Continuous/Discontinuous Operating Ratio (Manual Overwrite)
KI	**0.95**		Current Limit Reduction Factor (Manual Overwrite)
ILIMITEXT	**3.71**	A	Programmed Current Limit
ILIMITMIN	**3.91**	A	Minimum Current Limit
ILIMITMAX	**4.49**	A	Maximum Current Limit
RPL	**13.70**	MΩ	Power Limit Resistor
RPL2	**13.70**	MΩ	2nd Power Limit Resistor
PLIM_FLAG	**YES**		Enable Overload Power Limiting
IP	**3.38**	A	Peak Primary Current (at VMIN)
IRMS	**1.90**	A	Primary RMS Current (at VMIN)
DMAX	**0.61**		Maximum Duty Cycle
RTH_DEVICE	**7.69**	°C/W	PI Device Maximum Thermal Resistance
DEV_HSINK_TYPE	**Aluminum Extruded**		PI Device Heatsink Type
DEV_HSINK_PN	**533702B02552G**		PI Device (Extruded) Heatsink Part Number

Clamp Circuit

Var	*Value*	*Units*	*Description*
Clamp Type	**RCD + Zener Clamp**		Clamp Circuit Type

VCLAMP	**94**	V	Estimated average clamping voltage
Estimated Clamp Loss	**1.79**	W	Clamp Dissipation
VC_MARGIN	**130.23**	V	Clamp Voltage Safety Margin

Bias Variables

Var	*Value*	*Units*	*Description*
IB	**0.006**	A	Bias Current
PIVB	**59**	V	Bias Rectifier Max Peak Inverse Voltage

Transformer Construction Parameters

Var	*Value*	*Units*	*Description*
Core Type	**PQ32/30 [NP]**		Core Type (Manual Overwrite)
Core Material	**NC-2H (Nicera) or Equivalent**		Core Material
Bobbin Reference	**Generic, 6 pri. + 6 sec.**		Bobbin Reference
Bobbin Orientation	**Vertical**		Bobbin type
Primary Pins	**6**		Number of Primary pins used
Secondary Pins	**3**		Number of Secondary pins used
USE_SHIELDS	**NO**		Use shield Windings
LP_nom	**196**	µH	Nominal Primary Inductance
LP_Tol	**12.5**	%	Primary Inductance Tolerance (Manual Overwrite)
NP	**24.1**		Calculated Primary Winding Total Number of Turns
NSM	**5**		Secondary Main Number of Turns (Manual Overwrite)
Primary Current Density	**5**	A/mm²	Primary Winding Current Density
VOR	**120.0**	V	Reflected Output Voltage (Manual Overwrite)
BW	**18.60**	mm	Bobbin Winding Width
ML	**0.00**	mm	Safety Margin on Left Width
MR	**0.00**	mm	Safety Margin on Right Width
FF	**68**	%	Actual Transformer Fit Factor. 100% signifies fully utilized winding window
AE	**161.00**	mm²	Core Cross Sectional Area
ALG	**296**	nH/T²	Gapped Core Effective Inductance
BM	**150**	mT	Maximum Flux Density
BP	**219**	mT	Peak Flux Density
BAC	**45**	mT	AC Flux Density for Core Loss
LG	**0.645**	mm	Estimated Gap Length
L_LKG	**2.94**	µH	Estimated primary leakage inductance
LSEC	**20**	nH	Secondary Trace Inductance

Primary Winding Section 1

Var	*Value*	*Units*	*Description*
NP1	**13**		Rounded (Integer) Number of Primary winding turns in the first section of primary
Wire Size	**0.40**	mm	Primary Wire Inner Diameter Actual
Winding Type	**Trifilar (x3)**		Primary winding number of parallel wire strands
L	**0.95**		Primary Number of Layers
DC Copper Loss	**0.15**	W	Primary 1 DC Losses

Primary Winding Section 2

Var	*Value*	*Units*	*Description*

NP2	**12**		Rounded (Integer) Number of Primary winding turns in the second section of primary
Wire Size	**0.40**	mm	Primary Wire Inner Diameter Actual
Winding Type	**Trifilar (x3)**		Primary winding number of parallel wire strands
L2	**0.88**		Primary Number of Layers in 2nd split winding
DC Copper Loss	**0.18**	W	Primary 2 DC Losses

Output 1

Var	*Value*	*Units*	*Description*
VO	**24.00**	V	Output Voltage
IO	**4.00**	A	Output Current (Continuous Load)
IO_PEAK	**4.00**	A	Output Current at Peak Load
VOUT_ACTUAL	**24.00**	V	Actual Output Voltage
NS	**3**		Secondary Number of Turns
Foil Thickness	**50**	µm	Secondary Wire Inner Diameter Actual (Manual Overwrite)
Winding Type	**Foil**		Output winding number of parallel strands (Manual Overwrite)
L_S_OUT	**3.00**		Secondary Output Winding Layers
DC Copper Loss	**0.07**	W	Secondary DC Losses
VD	**0.90**	V	Output Winding Diode Forward Voltage Drop
PIVS	**99**	V	Output Rectifier Maximum Peak Inverse Voltage
ISP	**15.55**	A	Peak Secondary Current
ISRMS	**7.02**	A	Secondary RMS Current
RTH_DIODE	**14.40**	°C/W	Output Diode Maximum Thermal Resistance
OD_HSINK_TYPE	**Custom Aluminum**		Output Diode Heatsink Type
OD_HSINK_AREA	**6461**	mm²	Output Diode Heatsink Area
CO	**270 x 4**	µF	Output Capacitor
IRIPPLE	**5.77**	A	Output Capacitor RMS Ripple Current
Expected Lifetime	**35914**	hr	Expected Lifetime of Output Capacitor

Output 2

Var	*Value*	*Units*	*Description*
VO	**9.00**	V	Output Voltage
IO	**0.50**	A	Output Current (Continuous Load)
IO_PEAK	**0.50**	A	Output Current at Peak Load
VOUT_ACTUAL	**9.26**	V	Actual Output Voltage
NS	**2**		Secondary Number of Turns
Foil Thickness	**50**	µm	Secondary Wire Inner Diameter Actual (Manual Overwrite)
Winding Type	**Foil**		Output winding number of parallel strands (Manual Overwrite)
L_S_OUT	**2.00**		Secondary Output Winding Layers
DC Copper Loss	**0.07**	W	Secondary DC Losses
VD	**0.70**	V	Output Winding Diode Forward Voltage Drop
PIVS	**39**	V	Output Rectifier Maximum Peak Inverse Voltage
ISP	**1.94**	A	Peak Secondary Current
ISRMS	**0.88**	A	Secondary RMS Current
RTH_DIODE	**162.67**	°C/W	Output Diode Maximum Thermal Resistance
OD_HSINK_TYPE	**2 Oz (70 µ) Copper PCB**		Output Diode Heatsink Type
OD_HSINK_AREA	**52**	mm²	Output Diode Heatsink Area

CO	**330 x 1**	µF	Output Capacitor
IRIPPLE	**0.72**	A	Output Capacitor RMS Ripple Current
Expected Lifetime	**25711**	hr	Expected Lifetime of Output Capacitor

Feedback Circuit

Var	***Value***	***Units***	***Description***
DUAL_OUTPUT_FB_FLAG	**NO**		Dual Output Feedback regulations use flag
SF_FLAG	**NO**		Soft Finish Circuits use flag
TYPE_3CTRL_FLAG	**YES**		Phase Boost Network flag

The regulation and tolerances do not account for thermal drifting and component tolerance of the output diode forward voltage drop and voltage drops across the LC post filter. The actual voltage values are estimated at full load only.

Please verify cross regulation performance on the bench.