Power Supply Input

Var	*Value*	*Units*	*Description*
VACMIN	150	V	Minimum Input AC Voltage (Manual Overwrite)
VACMAX	300	V	Maximum Input AC Voltage (Manual Overwrite)
FL	50	Hz	Line Frequency (Manual Overwrite)
TC	1.87	ms	Input Rectifier Conduction Time
Z	0.59		Loss Allocation Factor
η	84.0	%	Efficiency Estimate (Target)
VMIN	183.4	V	Minimum DC Input Voltage
VMAX	424.3	V	Maximum DC Input Voltage

Input Section

Var	*Value*	*Units*	*Description*
Fuse	1.00	A	Input Fuse Rated Current
IAVG	0.31	A	Average Diode Bridge Current (DC Input Current)
Thermistor	15.00	Ω	Input Thermistor
MOV_VRATED	320	V	MOV Rated Voltage

Device Variables

Var	*Value*	*Units*	*Description*
Device	TOP256EN		PI Device Name (Manual Overwrite)
BVDSS	700	V	Drn-Src Bkdn Voltage
Current Limit Mode	Default		Device Current Limit Mode
OVP_FLAG	YES		Output Overvoltage Protection Enabled (Manual Overwrite)
PO	48.09	W	Total Output Power
VDRAIN Estimated	642.60	V	Estimated Drain Voltage
VDS	6.27	V	On state Drain to Source Voltage
FS	132000	Hz	Switching Frequency (at VMIN and Full Load)
KP	0.618		Continuous/Discontinuous Operating Ratio (at VMIN and Full Load)
DMAX	0.404		Maximum Duty Cycle (at VMIN and Full Load)
KI	0.58		Current Limit Reduction Factor (Manual Overwrite)
ILIMITEXT	1.38	A	Programmed Current Limit
ILIMITMIN	2.371	A	Minimum Current Limit
ILIMITMAX	2.729	A	Maximum Current Limit
PLIM_FLAG	NO		Enable Overload Power Limiting (Manual Overwrite)
IP	1.119	A	Peak Primary Current (at VMIN and Full Load)
IRMS	0.507	A	Primary RMS Current (at VMIN and Full Load)
RTH_DEVICE	40.15	°C/W	PI Device Heatsink Maximum Thermal Resistance
DEV_HSINK_TYPE	Custom Aluminum		PI Device Heatsink Type
DEV_HSINK_AREA	713	mm²	PI Device Heatsink Area

Clamp Circuit

Var	*Value*	*Units*	*Description*
Clamp Type	RCD Clamp		Clamp Circuit Type
VCLAMP	98.34	V	Average Clamping Voltage
Estimated Clamp Loss	1.32	W	Clamp Dissipation
VC_MARGIN	55.74	V	Clamp Voltage Safety Margin

Primary Bias Variables

Var	Value	Units	Description
VB	15.0	V	Bias Voltage
IB	0.006	A	Bias Current
PIVB	74	V	Bias Rectifier Maximum Peak Inverse Voltage
NB	8		Primary Bias Winding Number of Turns

Transformer Construction Parameters

Var	Value	Units	Description
Core Type	ETD29/16/10		Core Type (Manual Overwrite)
Core Material	PC44		Core Material (Manual Overwrite)
Bobbin Reference	Generic, 7 pri. + 7 sec.		Bobbin Reference
Bobbin Orientation	Horizontal		Bobbin type
Primary Pins	5		Number of Primary pins used
Secondary Pins	2		Number of Secondary pins used
USE_SHIELDS	NO		Use shield Windings
LP_nom	809	µH	Nominal Primary Inductance
LP_Tol	10.0	%	Primary Inductance Tolerance
NP	57.8		Calculated Primary Winding Total Number of Turns
NSM	12		Secondary Main Number of Turns (Manual Overwrite)
CMA	801	Cmils/A	Primary Winding Current Capacity
VOR	120.00	V	Reflected Output Voltage (Manual Overwrite)
BW	19.40	mm	Bobbin Winding Width
ML	0.00	mm	Safety Margin on Left Width
MR	0.00	mm	Safety Margin on Right Width
FF	74.55	%	Actual Transformer Fit Factor. 100% signifies fully utilized winding window
AE	76.00	mm²	Core Cross Sectional Area
ALG	218	nH/T²	Gapped Core Specific Inductance
BM	1853	Gauss	Maximum Flux Density
BP	2621	Gauss	Peak Flux Density
BAC	573	Gauss	AC Flux Density for Core Loss
LG	0.393	mm	Estimated Gap Length
L_LKG	20.22	µH	Estimated primary leakage inductance
LSEC	20	nH	Secondary Trace Inductance

Primary Winding Section 1

Var	Value	Units	Description
NP1	29		Number of Primary Winding Turns in the First Section of Primary
Wire Size	24	AWG	Primary Winding - Wire Size
Winding Type	Single (x1)		Primary Winding - Number of Parallel Wire Strands
L	0.85		Primary Winding - Number of Layers
DC Copper Loss	0.03	W	Primary Section 1 DC Losses

Primary Winding Section 2

Var	Value	Units	Description
NP2	29		Rounded (Integer) Number of Primary winding turns in the second section of primary
Wire Size	24	AWG	Primary Winding - Wire Size

Winding Type	Single (x1)		Primary Winding - Number of Parallel Wire Strands
L2	0.85		Primary Number of Layers in 2nd split winding

Output 1

Var	*Value*	*Units*	*Description*
VO	24.00	V	Typical Output Voltage
IO	2.00	A	Output Current
VOUT_ACTUAL	24.00	V	Actual Output Voltage
NS	12		Secondary Number of Turns
Wire Size	24	AWG	Wire size of secondary winding
Winding Type	Bifilar (x2)		Output winding number of parallel strands
L_S_OUT	0.93		Secondary Output Winding Layers
DC Copper Loss	0.31	W	Secondary DC Losses
VD	0.90	V	Output Winding Diode Forward Voltage Drop
VD	0.90	V	Output Winding Diode Forward Voltage Drop
PIVS	111.78	V	Output Rectifier Maximum Peak Inverse Voltage
ISP	5.381	A	Peak Secondary Current
ISRMS	2.965	A	Secondary RMS Current
RTH_RECTIFIER	29.06	°C/W	Output Rectifier Heatsink Maximum Thermal Resistance
OR_HSINK_TYPE	Custom Aluminum		Output Rectifier Heatsink Type
OR_HSINK_AREA	1428	mm²	Output Rectifier Heatsink Area
CO	680 x 1	µF	Output Capacitor - Capacitance
IRIPPLE	2.189	A	Output Capacitor - RMS Ripple Current
Expected Lifetime	44075	hr	Output Capacitor - Expected Lifetime

Feedback Circuit

Var	*Value*	*Units*	*Description*
DUAL_OUTPUT_FB_FLAG	NO		Get feedback from 2 outputs
SF_FLAG	NO		Soft Finish Circuits use flag
TYPE_3CTRL_FLAG	NO		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.