## 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 | Input Rectifier Conduction Time |
| Z | 0,63 | | Loss Allocation Factor |
| ŋ | 78,0 | % | Efficiency Estimate (Target) |
| VMIN | 87,3 | V | Minimum DC Input Voltage |
| VMAX | 374,8 | V | Maximum DC Input Voltage |

## Input Section

| *Var* | *Value* | *Units* | *Description* |
|---|---|---|---|
| Fuse | 4,00 | A | Input Fuse Rated Current |
| IAVG | 3,00 | A | Average Diode Bridge Current (DC Input Current) |
| Thermistor | 5,00 | Ω | Input Thermistor |

## Device Variables

| *Var* | *Value* | *Units* | *Description* |
|---|---|---|---|
| Device | TOP261EN | | PI Device Name |
| BVDSS | 700 | V | Drn-Src Bkdn Voltage |
| Current Limit Mode | Default | | Device Current Limit Mode |
| OVP_FLAG | NO | | Output Overvoltage Protection Enabled |
| PO | 204,09 | W | Total Output Power |
| VDRAIN Estimated | 568,78 | V | Estimated Drain Voltage |
| VDS | 16,56 | V | On state Drain to Source Voltage |
| FS | 132000 | Hz | Switching Frequency (at VMIN and Full Load) |
| KP | 0,45 | | Continuous/Discontinuous Operating Ratio (at VMIN and full load) |
| DMAX | 0,59 | | Maximum Duty Cycle (at VMIN and full load) |
| KI | 1,00 | | Current Limit Reduction Factor |
| ILIMITEXT | 6,88 | A | Programmed Current Limit |
| ILIMITMIN | 6,882 | A | Minimum Current Limit |
| ILIMITMAX | 7,918 | A | Maximum Current Limit |
| PLIM_FLAG | NO | | Enable Overload Power Limiting (Manual Overwrite) |
| IP | 6,60 | A | Peak Primary Current (at VMIN and full load) |
| IRMS | 3,97 | A | Primary RMS Current (at VMIN and full load) |
| RTH_DEVICE | 2,29 | °C/W | PI Device Heatsink Maximum Thermal Resistance |
| DEV_HSINK_TYPE | Aluminum Extruded | | PI Device Heatsink Type |
| **DEV_HSINK_PN** | **530002B02500G** | | **PI Device (Extruded) Heatsink Part Number. See Information section for detail** |

## Clamp Circuit

| *Var* | *Value* | *Units* | *Description* |
|---|---|---|---|
| Clamp Type | RCD + Zener Clamp | | Clamp Circuit Type |
| VCLAMP | 94 | V | Average Clamping Voltage |
| Estimated Clamp Loss | 4,56 | W | Clamp Dissipation |
| VC_MARGIN | 124,82 | V | Clamp Voltage Safety Margin |

## Bias Variables

| *Var* | *Value* | *Units* | *Description* |
|---|---|---|---|

| | | | |
|---|---|---|---|
| VB | 15,0 | V | Bias Voltage |
| IB | 0,006 | A | Bias Current |
| PIVB | 91 | V | Bias Rectifier Maximum Peak Inverse Voltage |
| NB | 4 | | Bias Winding Number of Turns |

## Transformer Construction Parameters

| *Var* | *Value* | *Units* | *Description* |
|---|---|---|---|
| Core Type | EER40 | | Core Type |
| Core Material | PC95 | | Core Material |
| Bobbin Reference | Generic, 8 pri. + 8 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 | 128 | µH | Nominal Primary Inductance |
| LP_Tol | 10,0 | % | Primary Inductance Tolerance |
| NP | 19,7 | | Calculated Primary Winding Total Number of Turns |
| NSM | 5 | | Secondary Main Number of Turns |
| CMA | 410 | Cmils/A | Primary Winding Current Capacity |
| VOR | 100,4 | V | Reflected Output Voltage |
| BW | 27,50 | mm | Bobbin Winding Width |
| ML | 0,00 | mm | Safety Margin on Left Width |
| MR | 0,00 | mm | Safety Margin on Right Width |
| FF | 84 | % | Actual Transformer Fit Factor. 100% signifies fully utilized winding window |
| AE | 149,00 | mm² | Core Cross Sectional Area |
| ALG | 297 | nH/T² | Gapped Core Specific Inductance |
| BM | 2589 | Gauss | Maximum Flux Density |
| BP | 3107 | Gauss | Peak Flux Density |
| BAC | 584 | Gauss | AC Flux Density for Core Loss |
| LG | 0,579 | mm | Estimated Gap Length |
| L_LKG | 1,92 | µH | Estimated primary leakage inductance |
| LSEC | 20 | nH | Secondary Trace Inductance |

## Primary Winding Section 1

| *Var* | *Value* | *Units* | *Description* |
|---|---|---|---|
| NP1 | 10 | | Number of Primary Winding Turns in the First Section of Primary |
| Wire Size | 18 | AWG | Primary Winding - Wire Size |
| Winding Type | Single (x1) | | Primary Winding - Number of Parallel Wire Strands |
| L | 0,40 | | Primary Winding - Number of Layers |
| DC Copper Loss | 0,25 | W | Primary Section 1 DC Losses |

## Primary Winding Section 2

| *Var* | *Value* | *Units* | *Description* |
|---|---|---|---|
| NP2 | 10 | | Rounded (Integer) Number of Primary winding turns in the second section of primary |
| Wire Size | 18 | AWG | Primary Winding - Wire Size |
| Winding Type | Single (x1) | | Primary Winding - Number of Parallel Wire Strands |
| L2 | 0,40 | | Primary Number of Layers in 2nd split winding |

| | | | |
|---|---|---|---|
| DC Copper Loss | 0,36 | W | Primary Section 2 DC Losses |

## Output 1

| *Var* | *Value* | *Units* | *Description* |
|---|---|---|---|
| VO | 24,00 | V | Typical Output Voltage |
| IO | 8,50 | A | Output Current |
| VOUT_ACTUAL | 24,00 | V | Actual Output Voltage |
| NS | 5 | | Secondary Number of Turns |
| Foil Thickness | 5 | mil | Wire size of secondary winding |
| Winding Type | Foil | | Output winding number of parallel strands |
| L_S_OUT | 5,00 | | Secondary Output Winding Layers |
| DC Copper Loss | 0,20 | W | Secondary DC Losses |
| OD_VD | 1,50 | V | Output Winding Diode Forward Voltage Drop |
| PIVS | 118 | V | Output Rectifier Maximum Peak Inverse Voltage |
| ISP | 25,96 | A | Peak Secondary Current |
| ISRMS | 13,11 | A | Secondary RMS Current |
| RTH_RECTIFIER | 4,37 | °C/W | Output Rectifier Heatsink Maximum Thermal Resistance |
| OR_HSINK_TYPE | Aluminum Extruded | | Output Rectifier Heatsink Type |
| OR_HSINK_PN | 6399B-P2G | | Output Rectifier (Extruded) Heatsink Part Number |
| CO | 330 x 6 | µF | Output Capacitor - Capacitance |
| IRIPPLE | 9,98 | A | Output Capacitor - RMS Ripple Current |
| Expected Lifetime | 36987 | 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 | YES | | Phase Boost Network flag |

**High output current Flyback design.**

**Use parallel low ESR output capacitors, reduce secondary ripple currents by reducing VOR and KP.**

**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.**