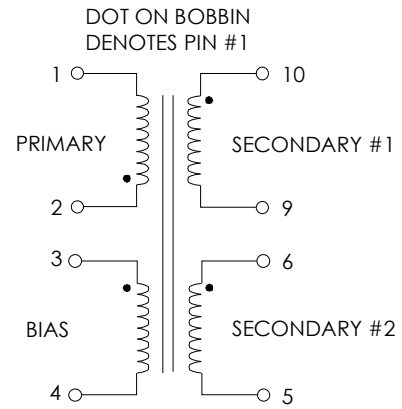


**TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C**  
 SWITCHING TRANSFORMER DESIGNED FOR USE WITH TOP 222  
 REFER TO APPLICATION CIRCUIT OF FIGURE 3

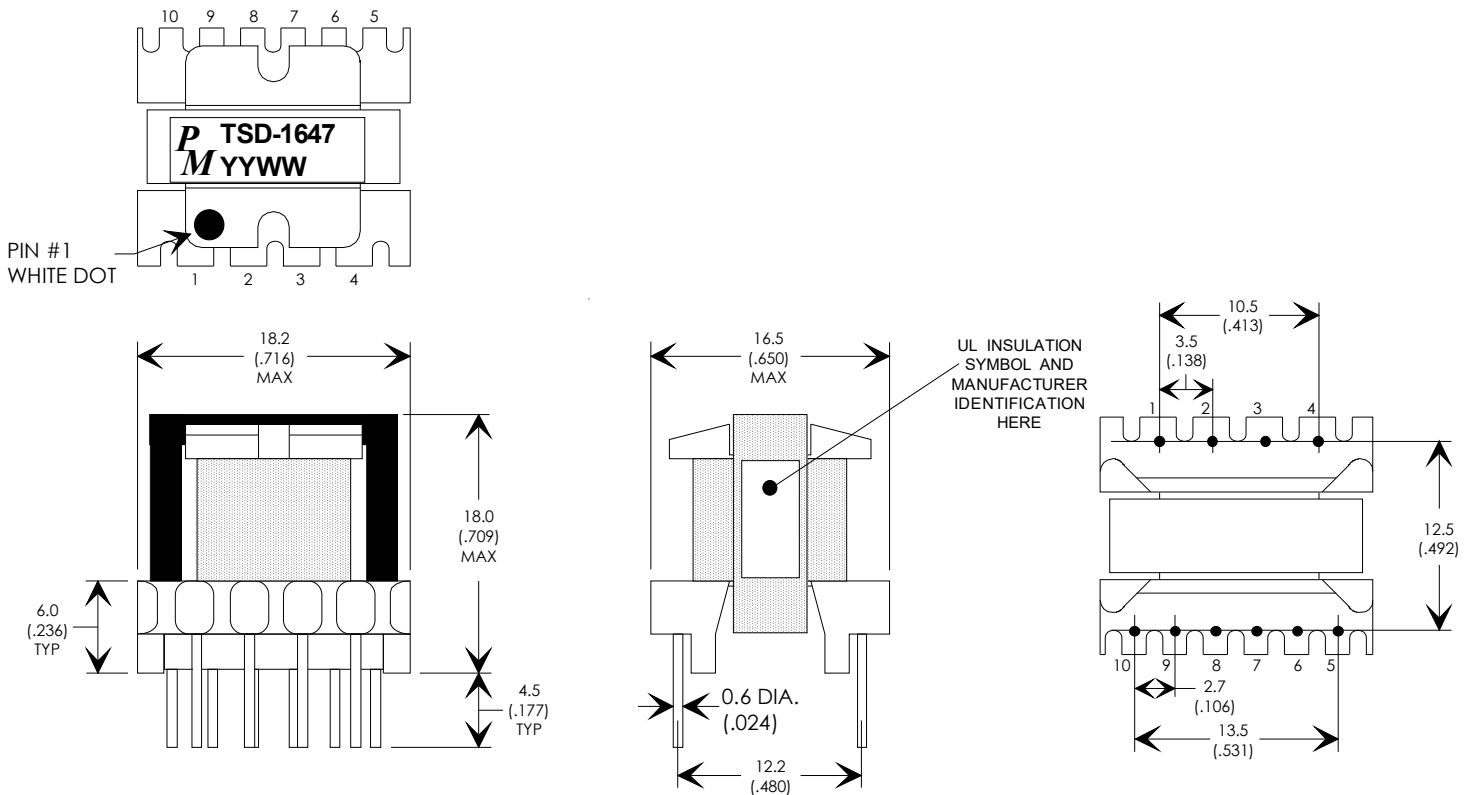
PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) FREQ. = 100 KHZ @ 0.250Vrms	1400	1500	1600	μHY
TURN RATIO'S: SEC#1 (10-9) : PRIMARY (2-1) SEC#2 (6-5) : PRIMARY (2-1) PRIMARY (2-1) : BIAS (3-4)	-----	1:3.28 1:9.83 1:6.21	-----	± 3% ± 3% ± 3%
PRI LEAKAGE IND. (SEC'S SHORTED) FREQ. = 100 KHZ @ 0.250Vrms	-----	-----	75	μHY
HIPOT: PRIMARY TO SEC'S BIAS TO SEC'S	3000 3000	----- -----	----- -----	Vrms Vrms
APP CIRCUIT PARAMETERS: DC HOT RAIL VOLTAGE OUTPUT VOLTAGE (6-5) OUTPUT CURRENT CONTINUOUS OUTPUT VOLTAGE (10-9) OUTPUT CURRENT CONTINUOUS LOAD REGULATION 10-100% RIPPLE	----- ----- 0.0 0.0 ----- -----	115 7.5 ----- 24.0 ----- 10 50.0	----- ----- 265 200 ----- -----	Vdc Vdc mA Vdc mA ±% ±mV

**FIGURE 1: SCHEMATIC DIAGRAM**



- NOTE 1:**
- A) ALL MATERIALS MEET "UL", "CSA" & "IEC" REQUIREMENTS
  - B) TRIPLE BASIC INSULATED SECONDARY.
  - C) DESIGNED TO MEET ≥6.2mm CREEPAGE REQUIREMENTS.
  - D) VARNISH FINISHED ASSEMBLY.

**FIGURE 2: PHYSICAL DIMENSIONS mm (INCHES)**



REV.	DESCRIPTION OF CHANGES	BY
03/20/01	ORIGINAL RELEASE	PP
07/13/01	CORRECTED POLARITY ON SCHEMATIC	MP

**RoHS**

UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN MM  
 DIMENSIONAL TOLERANCES ARE:  
 DECIMALS ANGLES  
 .X ± .25 ±0° 30'  
 .XX ± .15  
 DO NOT SCALE DRAWING



**TRANSFORMER CONTROL DRAWING**

PREMIER P/N: TSD-1647	REVISION: 07/13/01
ENGR: PETER PHAM	REF:
SCALE: NONE	SHEET: 1 OF 2

## APPLICATION NOTES

Premier Magnetics' TSD-1647 Switch Mode Transformer was designed for use with Power Integrations, Inc. PWR-TOP222 three terminal off-line PWM switching regulator in the Flyback Buck-Boost circuit configuration. The PWR-TOPXXX series from Power Integrations, Inc. are self contained 100KHz three terminal voltage controlled PWM switching regulators. This series contains all necessary functions for an off-line switched mode control DC power source. These switching regulators provide a very simple solution to off-line designs. The inductors and transformer used with the PWR-TOPXXX are critical to the performance of the circuit. They define the overall efficiency, output power and overall physical size.

Below is a universal input (85Vac to 265Vac) input high precision 7 watt application circuit utilizing Power Integrations PWR-TOP222 switching regulator. . The component values listed are intended for reference purposes only.

**FIGURE 3: TYPICAL APPLICATION CIRCUIT**

PREMIER MAGNETICS PART NUMBERS:  
(REQUEST DATA SHEETS BY PART#)

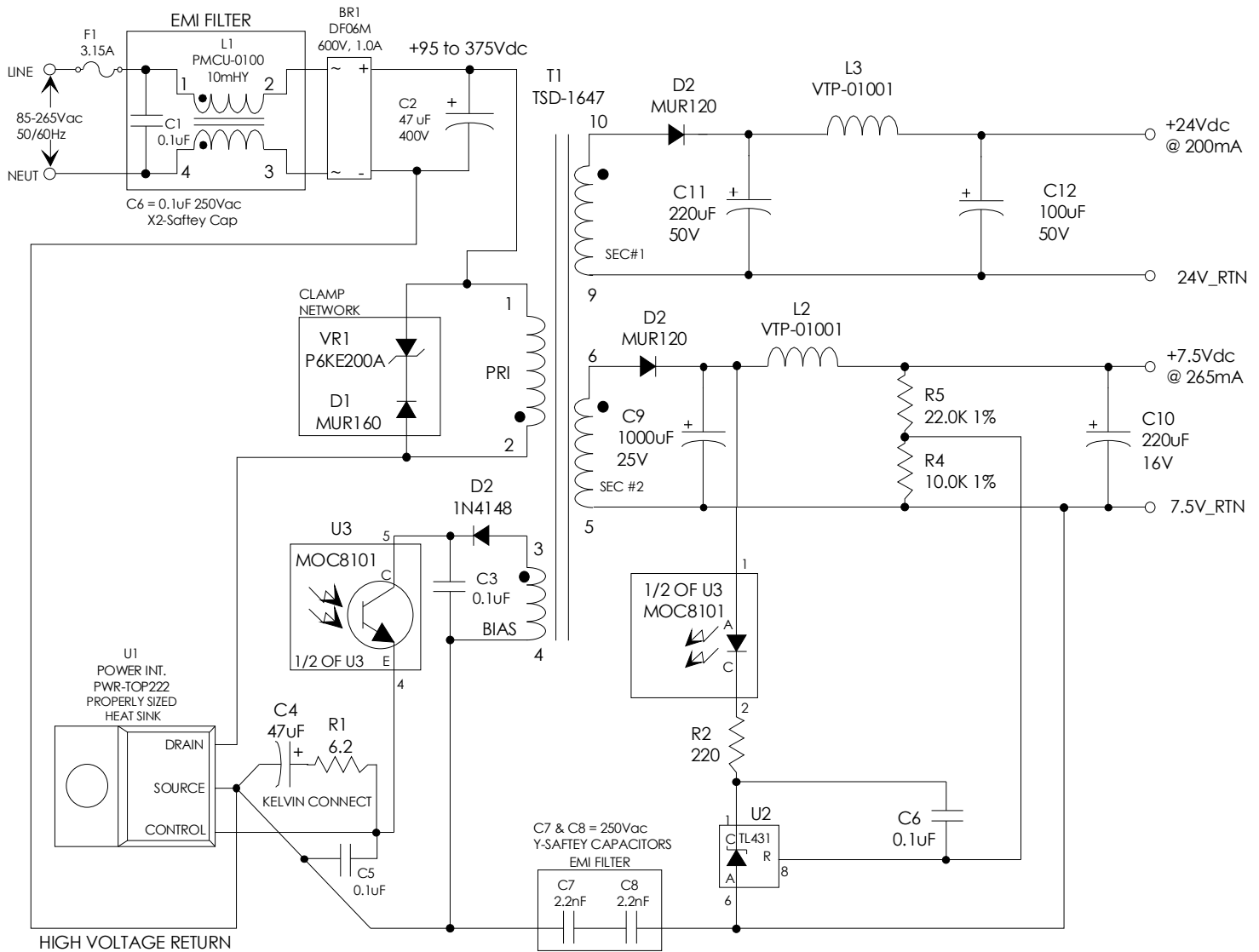
T1 = TSD-1647 MAIN SWITCHING TRANSFORMER  
L1 = PMCE-0330  
L2, L3 = VTP-01001, 10uH @1A

ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:

C9 :  $\geq 25V$ , 1000uF, Ripple Rated  $\geq 980mA$  @ Max. Op. Temp.  
(Panasonic P/N ECA1EFG102, 105C)

C10 :  $\geq 16V$ , 220uF

C11,12 :  $\geq 50V$ , 220uF, Ripple Rated  $\geq 500mA$  @ Max. Op. Temp.  
(Panasonic P/N ECA1HFG221, 105C)



UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN MM  
DIMENSIONAL TOLERANCES ARE:  
DECIMALS ANGLES  
.X  $\pm .25$   $\pm 0^\circ 30'$   
.XX  $\pm .15$   
DO NOT SCALE DRAWING

TRANSFORMER CONTROL DRAWING	
PREMIER P/N: TSD-1647	REVISION: 07/13/01
ENGR: PETER PHAM	REF:
SCALE: NONE	SHEET: 2 OF 2