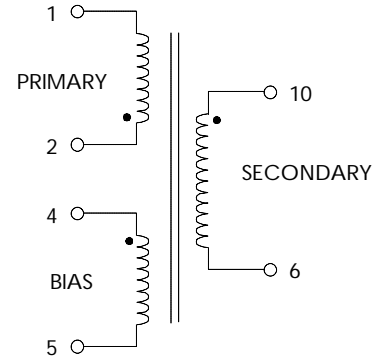


**TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C**

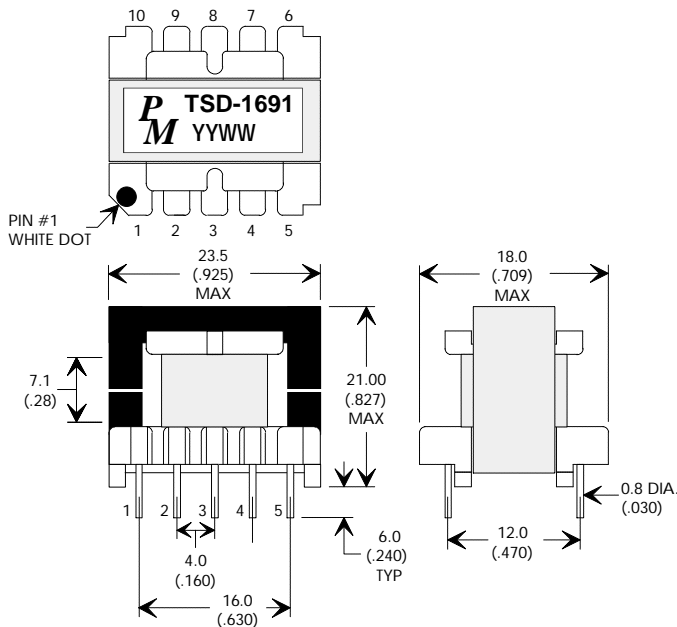
PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	320	350	380	μHY
TURN RATIO'S: SEC (10-6) : PRI (2-1) BIAS (4-5) : PRI (2-1)	-----	1 : 7.8 -----	-----	± 4% ----- ± 4%
PRI LEAKAGE IND. (SEC SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	-----	-----	12.0	μHY
HIPOT: PRIMARY TO SECONDARIES PRIMARY TO BIAS	3000 200	----- -----	----- -----	VRMS VRMS
APP CIRCUIT PARAMETERS: (1) AC LINE VOLTAGE 47/400 Hz OUTPUT VOLTAGE OUTPUT CURRENT CONTINUOUS LINE REGULATION (85 TO 265Vac) LOAD REGULATION 10-100% RIPPLE	85 ----- 0.0 ----- ----- -----	----- 8.6 ----- 0.20 ----- 0.20 ----- 50.0	265 ----- 1800 ----- ----- -----	Vac Vdc mA ±% ±% ±mV

**FIGURE 1: SCHEMATIC DIAGRAM**



**NOTE1:**  
 A) ALL MATERIALS MEET "UL", "CSA" & "IEC" REQUIREMENTS  
 B) 130 °C INSULATION SYSTEM.  
 C) VARNISH FINISHED ASSEMBLY.

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



REV.	DESCRIPTION OF CHANGES	BY
09/06/01	ORIGINAL RELEASE	PP



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

**FLYBACK TRANSFORMER CONTROL DRAWING**

PREMIER P/N: TSD-1691	REVISION: 09/06/01
DRAWN BY: PETER PHAM	REF: TOP 233 15.5W
SCALE: NONE	SHEET: 1 OF 4

## APPLICATION NOTES

Premier Magnetic's TSD-1691 Switch Mode Transformer was designed for use with Power Integrations, Inc. TOP233 three terminal off-line PWM switching regulator in the Flyback Buck-Boost circuit configuration. This conversion topology can provide isolated multiple outputs with efficiencies up to 90%. Premier's TSD-1691 transformer has been optimized to provide maximum power throughput.

The TOPXXX series from Power Integrations, Inc. are self contained 130KHz 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.

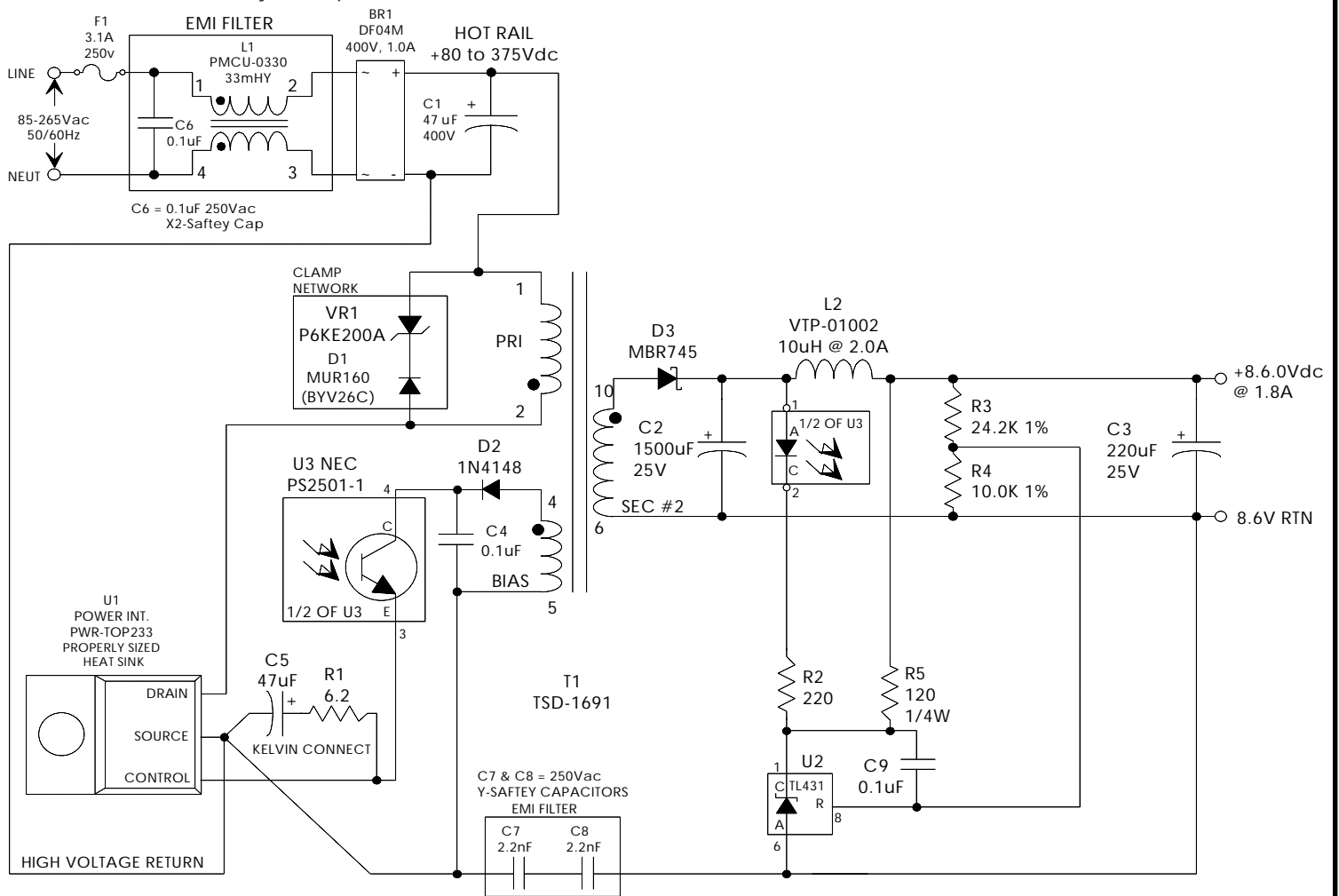
Below is a universal input high precision 16 watt application circuit utilizing Power Integrations TOP233 switching regulator in the flyback buck-boost configuration. Proper thermal management of the TOP233, VR1 & D3 is required for reliable operation. As with any flyback circuit the output is not intended to be run under a no load condition. Careful evaluation by the end user is required and should be based on the actual application & it's associated environmental conditions. The component values listed are intended for reference purposes only.

**FIGURE 3: TYPICAL APPLICATION CIRCUIT**

**PREMIER MAGNETICS PART NUMBERS:**  
(REQUEST DATA SHEETS BY PART#)  
L1 = PMCU-0330 33mHy EMI/RFI CMC  
T1 = TSD-1691 MAIN SWITCHING TRANSFORMER  
L2 = VTP-01002 10uHy, 1.0Amp INDUCTOR

**ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:**

+8.6V OUTPUT: C2 ≥15V, Ripple Rated ≥ 2350mA @ 100KHz @ Max. Op. Temp.  
PANASONIC FA SERIES:  
C2 = 1500uF, 25V = PANASONIC EEUFA1E152L



PREMIER P/N: TSD-1691	REVISION: 09/06/01
DRAWN BY: PETER PHAM	REF: TOP 233 15.5W
SCALE: NONE	SHEET: 2 OF 4