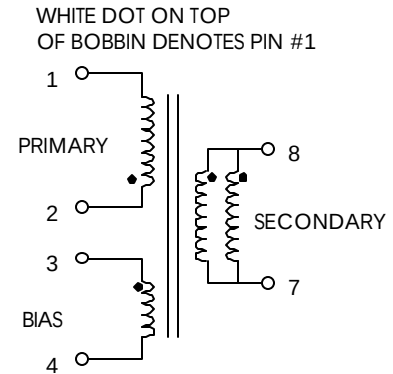


TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C
SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS
TOP223Y. REFER TO APPLICATION CIRCUIT OF FIGURE 3.

PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	950	1060	1170	μHY
TURN RATIO'S: SECONDARY (8-7) : PRIMARY (2-1) BIAS (3-4) : PRIMARY (2-1)	----- -----	1:6.083 1:14.60	----- -----	± 3% ± 3%
PRI LEAKAGE IND. (7-8 SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	-----	30.0	45.0	μHY
HIPOT: PRIMARY TO SECONDARY BIAS TO SECONDARY	3000 3000	----- -----	----- -----	Vrms Vrms
APP CIRCUIT PARAMETERS: (1) AC LINE VOLTAGE 47/400 Hz OUTPUT VOLTAGE OUTPUT CURRENT CONTINUOUS OUTPUT CURRENT PEAK LINE REGUALTION (85 TO 265Vac) LOAD REGULATION .50 to 1.00A VOLTAGE @ 0.0A EXT LOAD	85 0.0 0.0	----- 15.0 ----- 1.0 2.5 17.0	265 1.0 2.0	Vac Vdc Amps Amps % % Vdc

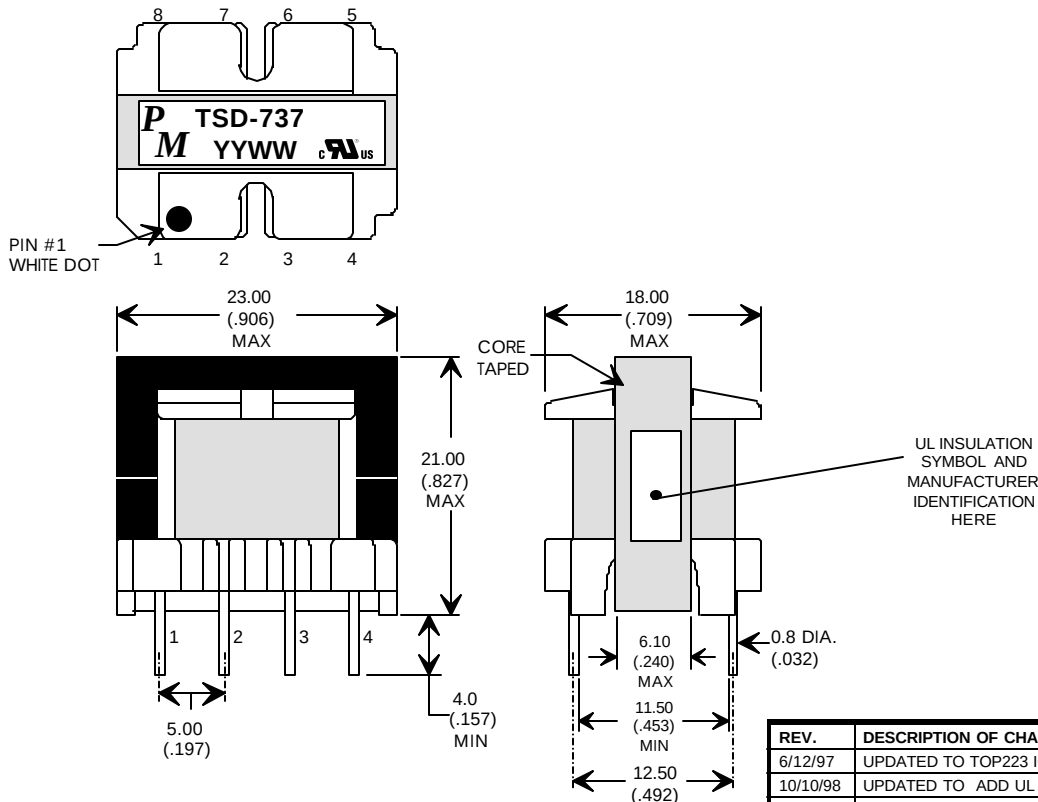
FIGURE 1: SCHEMATIC DIAGRAM



NOTE1:
REINFORCED INSULATION SYSTEM, UL1950, IEC950, CSA-950:
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.
E) UL1950 & CSA-950 CERTIFIED: FILE #E162344.
F) UL CLASS (B) 130 INSULATION SYSTEM PM130-R1, PM130-H1, PM130-H1A (UL FILE #E177139) OR ANY UL AUTHORIZED CLASS (B) INSULATION SYSTEM.

(1) REFER TO APPLICATION CIRCUIT OF FIGURE 3.

FIGURE 2: PHYSICAL DIMENSIONS mm (INCHES)



REV.	DESCRIPTION OF CHANGES	BY
6/12/97	UPDATED TO TOP223 IC. NO OTHER CHANGES	TO
10/10/98	UPDATED TO ADD UL 1950 & CE-950 APPROVAL & MARKING	TO
04/14/99	UPDATED TO UL CLASS (B) 130 INSULATION SYSTEM	MD
09/19/00	CORRECT R1 ON FIG 3 APPLICATION CIRCUIT	PP
12/13/00	CORRECT SEC. DWGS FROM 12 TURNS TO 12 TURNS BIFILAR, ADDED BIAS MARGIN TAPE	MD

EI22/19/6, 8-PIN VERTICAL BOBBIN



**Premier
Magnetics Inc.**

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-737	REVISION: 12/13/00
DRAWN BY: TOM O'NEIL	REF: 38-0027-00
SCALE: NONE	SHEET: 1 OF 6

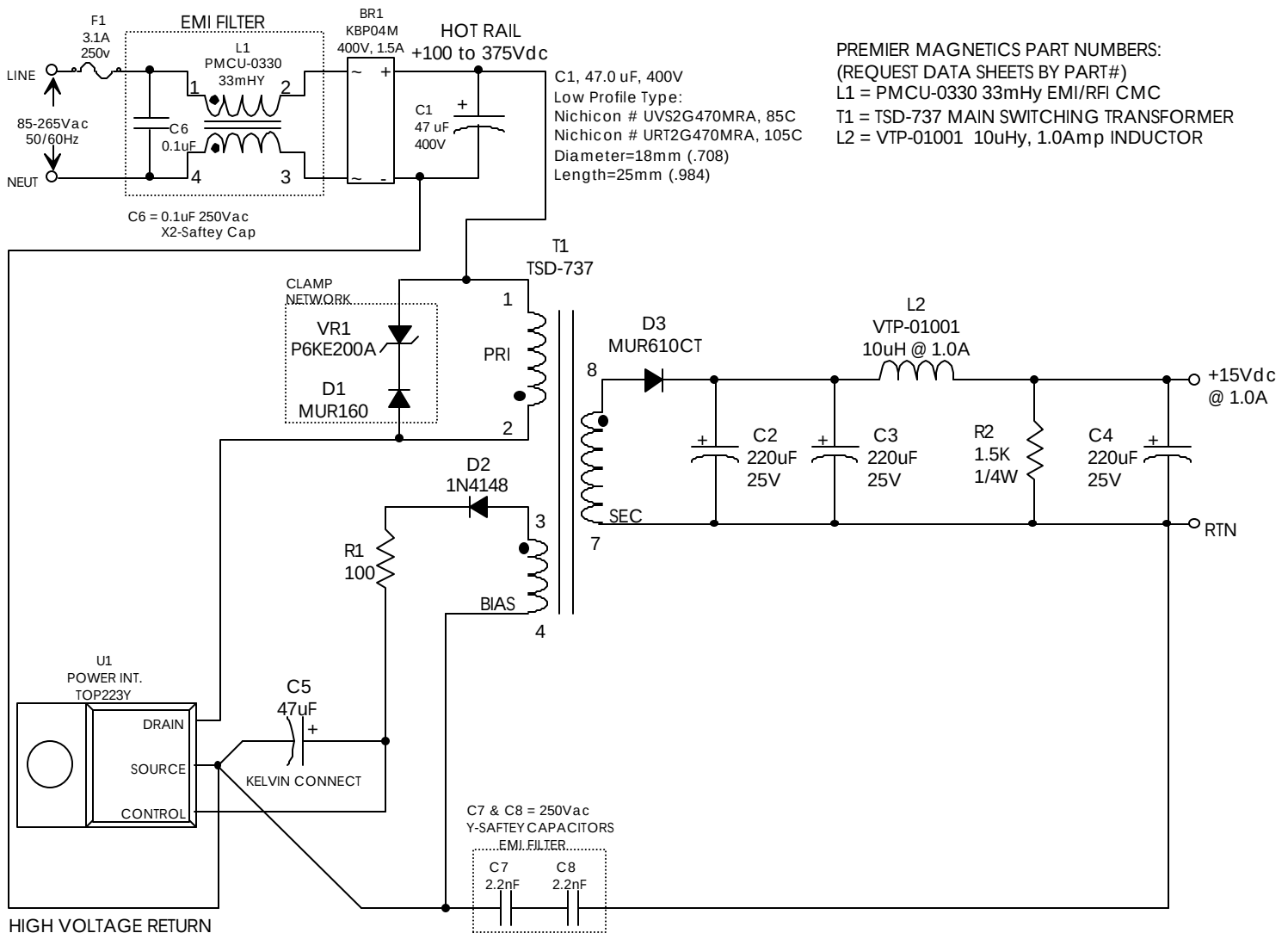
APPLICATION NOTES

Premier Magnetics' TSD-737 Switch Mode Transformer was designed for use with Power Integrations, Inc. TOP223Y three terminal off-line PWM switching regulator in a low cost Isolated Flyback Buck-Boost circuit configuration. The feedback implementation is accomplished indirectly by regulating the bias winding voltage. This is the lowest cost topology but has the drawback of poor load regulation. As such this topology is intended for use where load power is fairly constant. Resistor R2 provides an output clamp to prevent output voltage runaway and possible circuit damage under a no load condition.

The 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 switch mode controlled DC power source. These switching regulators provide a very simple solution to off-line designs. The inductors and transformer used with the 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 15 watt application circuit utilizing Power Integrations TOP223 switching regulator in the isolated flyback buck-boost configuration. The component values listed are intended for reference purposes only.

FIGURE 3: TYPICAL APPLICATION CIRCUIT



**Premier
Magnetics Inc.**

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-737	REVISION: 12/13/00
DRAWN BY: TOM O'NEIL	REF: 38-0027-00
SCALE: NONE	SHEET: 2 OF 6