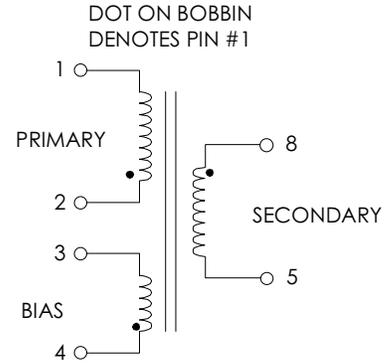


TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C
 SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS
 TOP221P REFER TO APPLICATION CIRCUIT OF FIGURE 3

PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	3.48	4.00	4.52	mHY
TURNRATIO'S: SECONDARY (8-5) : PRIMARY (2-1) BIAS (4-3) : PRIMARY (2-1)	-----	1: 8.375 1:14.889	-----	± 3% ± 3%
PRI LEAKAGE IND. (8-5 SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	-----	-----	120.0	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 REGULATION (85 TO 265Vac) LOAD REGULATION 10-100% RIPPLE	85 ----- 0.0 ----- ----- ----- -----	----- 12.0 ----- 1.50 5.00 50.0	265 ----- 300 400 ----- ----- -----	Vac Vdc mA mA ±% ±% ±mV

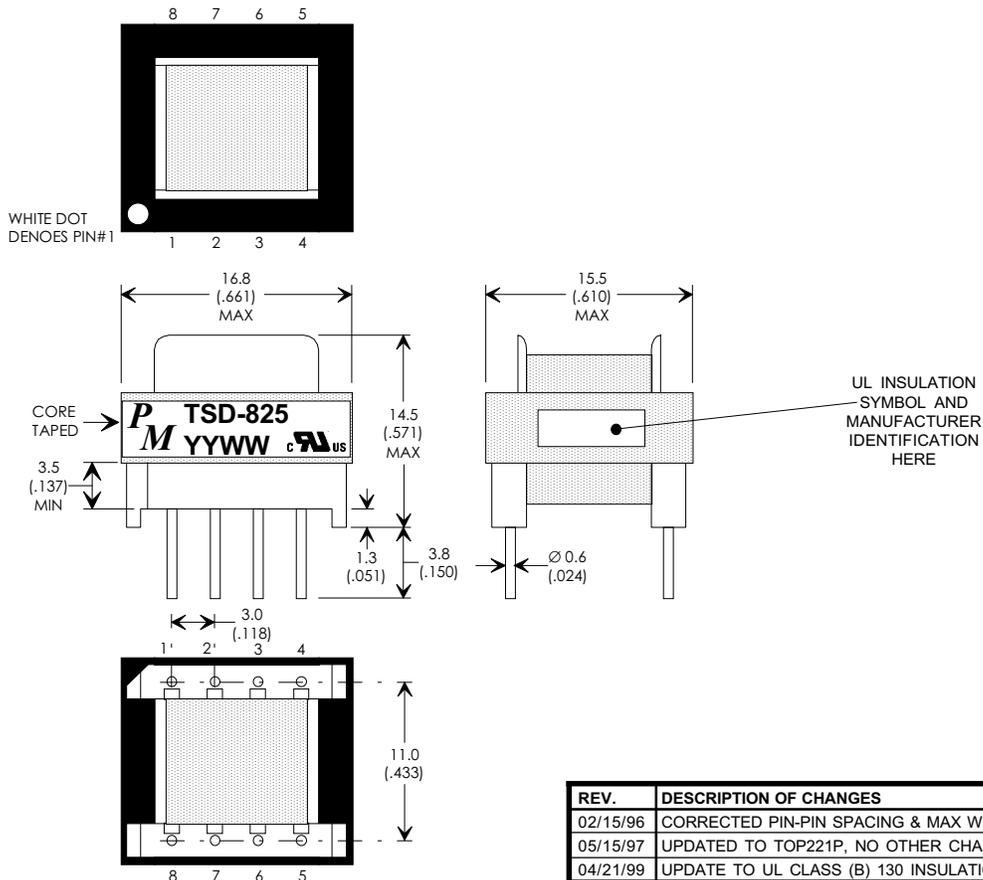
FIGURE 1: SCHEMATIC DIAGRAM



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) UL 1950 & 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)



EE16/EI16, 8-PIN HORIZONTAL

REV.	DESCRIPTION OF CHANGES	BY
02/15/96	CORRECTED PIN-PIN SPACING & MAX WIDTH	TO
05/15/97	UPDATED TO TOP221P, NO OTHER CHANGES	TO
04/21/99	UPDATE TO UL CLASS (B) 130 INSULATION SYSTEM	MD



**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-825	REVISION: 04/21/99
DRAWN BY: TOM O'NEIL	REF: TOP221P
SCALE: NONE	SHEET: 1 OF 6

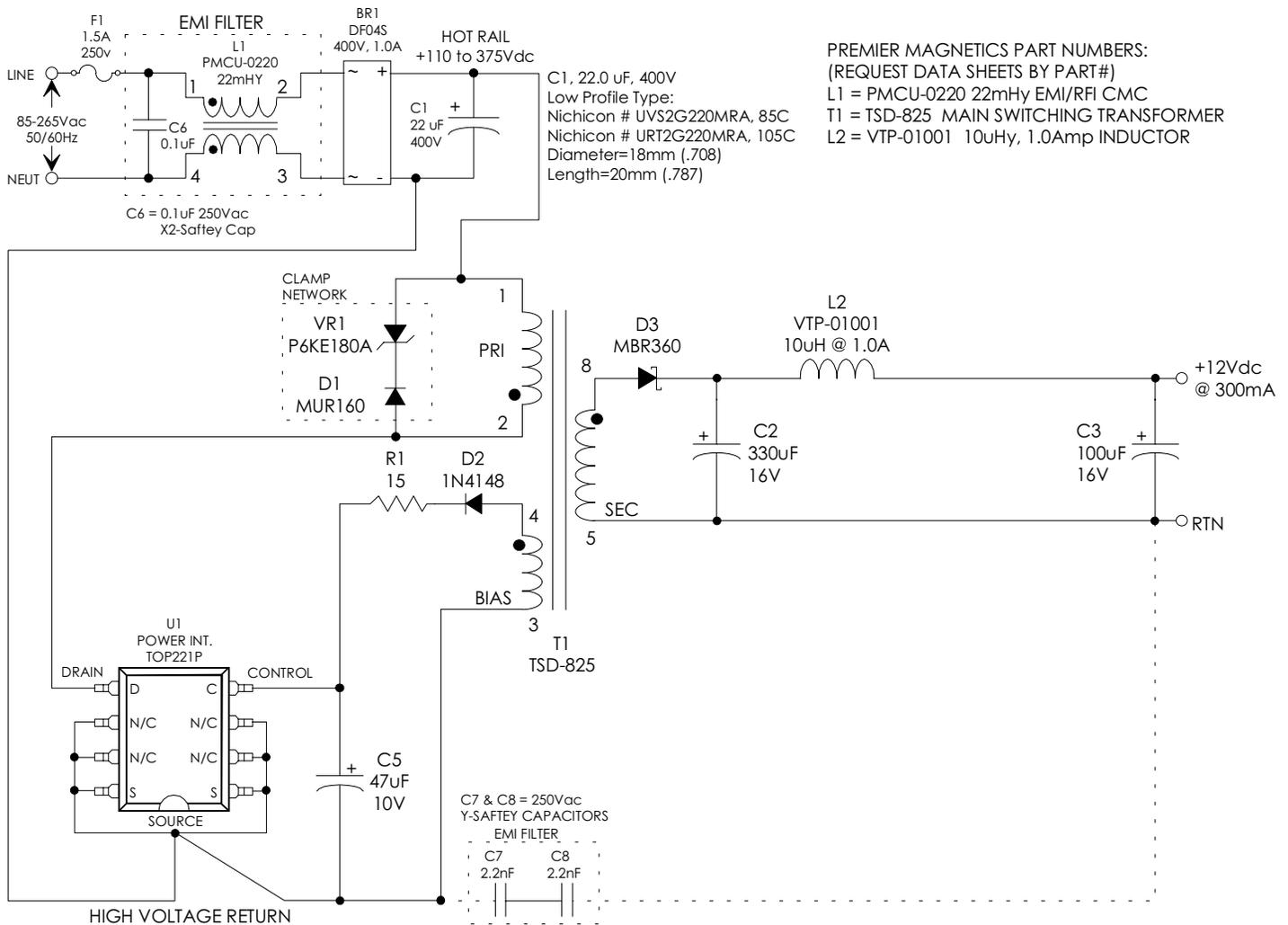
APPLICATION NOTES

Premier Magnetics' TSD-825 Switch Mode Transformer was designed for use with Power Integrations, Inc. TOP221P 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-825 transformer has been optimized to provide maximum power throughput.

The TOP2XX 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, 4 watt application circuit utilizing Power Integrations TOP221 switching regulator in the flyback buck-boost configuration. This circuit provides +12Vdc at 300mA continuous and is capable of 400mA peak for short periods of time. This circuit represents the lowest cost implementation and utilizes the bias winding for feedback control. As such the line & load regulation are worse than that which could be achieved by utilizing an opto-coupler to sense the actual outputs. The component values listed are intended for reference purposes only. Resistor R1 may be adjusted up to 100 Ohms and down to 10 Ohms. As R1 increases in value the output voltages will increase, and vice-versa, thus allowing some fine adjustment on the initial output voltage. The EMI/RFI capacitors C7 & C8 are shown for reference but may not be needed to meet EMI/RFI emission specifications.

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-825	REVISION: 04/21/99
DRAWN BY: TOM O'NEIL	REF: TOP221P
SCALE: NONE	SHEET: 2 OF 6