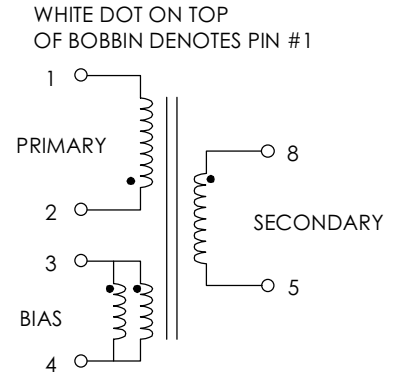


**TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C**  
 SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS  
 PWR-TOP202YAI. REFER TO APPLICATION CIRCUIT OF FIGURE 3.

PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	558	620	682	HY
TURN RATIO'S: SECONDARY (8-5) : PRIMARY (2-1) BIAS (3-4) : PRIMARY (2-1)	-----	1: 7.71	-----	± 4%
PRI LEAKAGE IND. (8-5 SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	-----	-----	20.0	HY
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 ----- ----- 0.20 0.20 50.0	265 ----- 1.20 1.40 ----- ----- -----	Vac Vdc Amps Amps ±% ±% ±mV

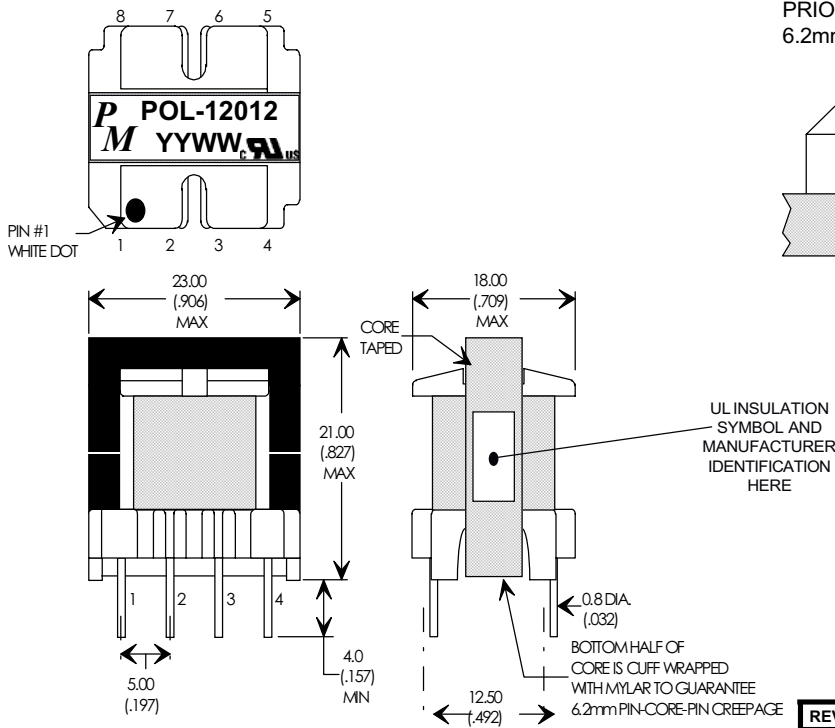
**FIGURE 1: SCHEMATIC DIAGRAM**



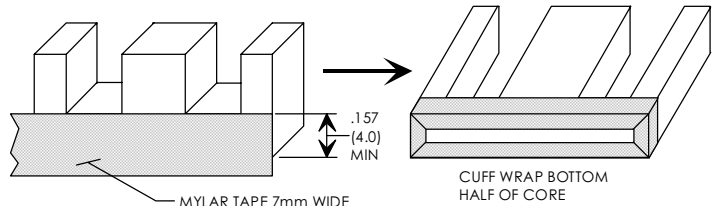
**NOTE1:**  
**REINFORCED INSULATION SYSTEM, UL1950, IEC950, CSA-950:**  
 A) ALL MATERIALS MEET "UL", "CSA" & "IEC" REQUIREMENTS  
 B) TRIPLE BASIC INSULATED SECONDARY.  
 C) DESIGNED TO MEET >6.2mm CREEPAGE REQUIREMENTS.  
 D) VARNISH FINISHED ASSEMBLY.  
 E) UL1950 & CSA-950 CERTIFIED: FILE #E162344.  
 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)**



**NOTE2:**  
 A) BOTTOM HALF OF CORE IS CUFF WRAPPED  
 PRIOR TO ASSEMBLY. THIS GAURANTEES  
 6.2mm CREEPAGE PIN-CORE-PIN



EI22/19/6, 8-PIN VERTICAL BOBBIN

REV.	DESCRIPTION OF CHANGES	BY
12/23/95	ORIGINAL RELEASE	TO
04/28/99	UPDATE TO UL CLASS (B) 130 INSULATION SYSTEM	MD



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: POL-12012	REVISION: 04/28/99
DRAWN BY: TOM O'NEIL	REF: PWR-TOP202YAI
SCALE: NONE	SHEET: 1 OF 6

## APPLICATION NOTES

Premier Magnetics' POL-12012 Switch Mode Transformer was designed for use with Power Integrations, Inc. PWR-TOP202YA1 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 POL-12012 transformer has been optimized to provide maximum power throughput.

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 high precision 15 watt application circuit utilizing Power Integrations PWR-TOP202 switching regulator in the flyback buck-boost configuration. The component values listed are intended for reference purposes only. The soft start capacitor C<sub>ss</sub> is optional depending on the specific application.

**FIGURE 3: TYPICAL APPLICATION CIRCUIT**

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

L1 = PMCU-0330 33mHy EMI/RFI CMC

T1 = POL-12012 MAIN SWITCHING TRANSFORMER

L2 = VTP-01001 10uHy, 1.0Amp INDUCTOR

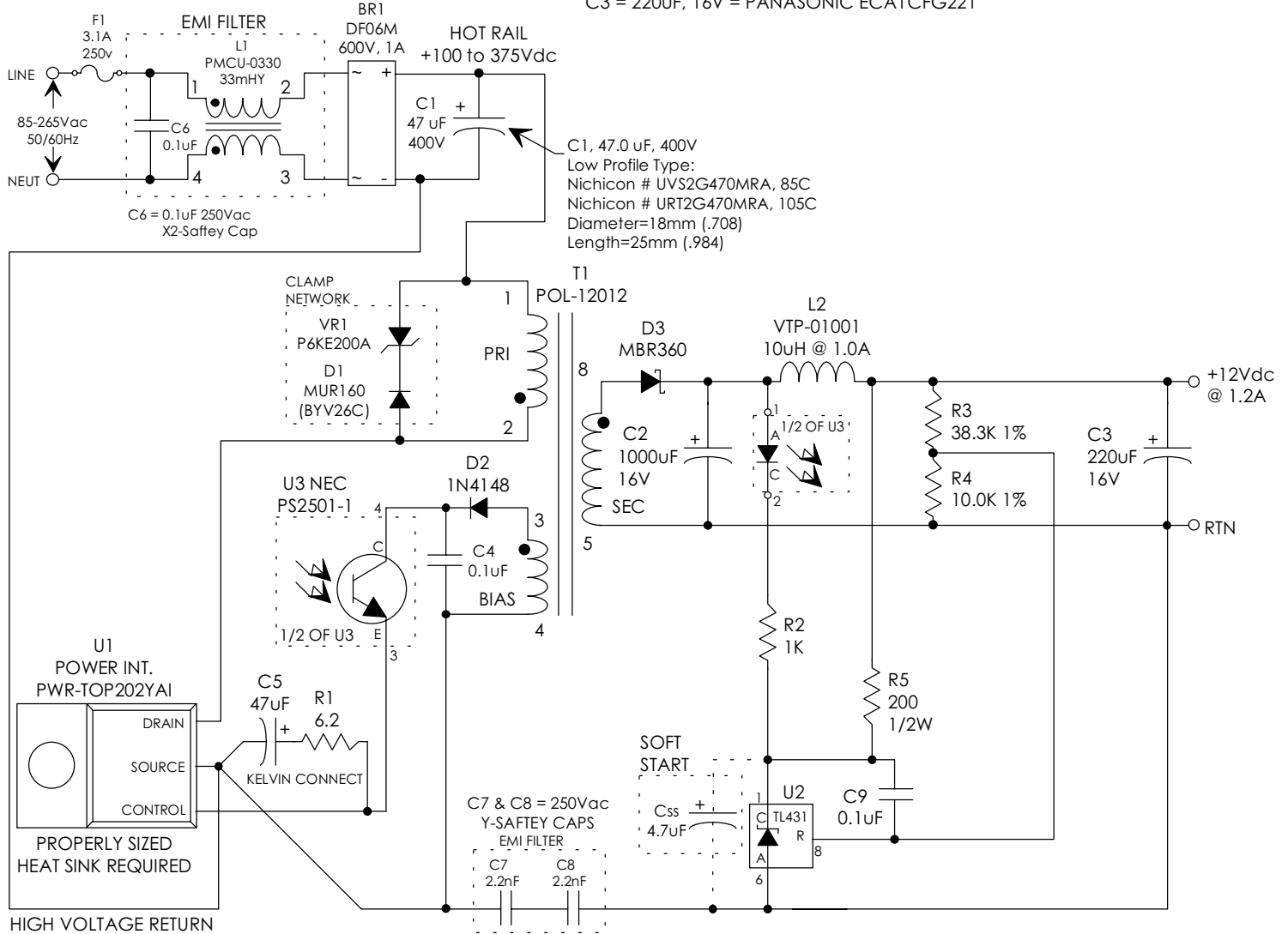
ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:

+12V OUTPUT: C<sub>2</sub> ≥ 16V, Ripple Rated ≥ 1176mA @ 100KHz @ Max. Op. Temp.

PANASONIC HFG SERIES: LOW IMPEDANCE RADIAL SERIES

C<sub>2</sub> = 1000uF, 16V = PANASONIC ECA1CFG102

C<sub>3</sub> = 220uF, 16V = PANASONIC ECA1CFG221



**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: POL-12012	REVISION: 04/28/99
DRAWN BY: TOM O'NEIL	REF: PWR-TOP202YA1
SCALE: NONE	SHEET: 2 OF 6