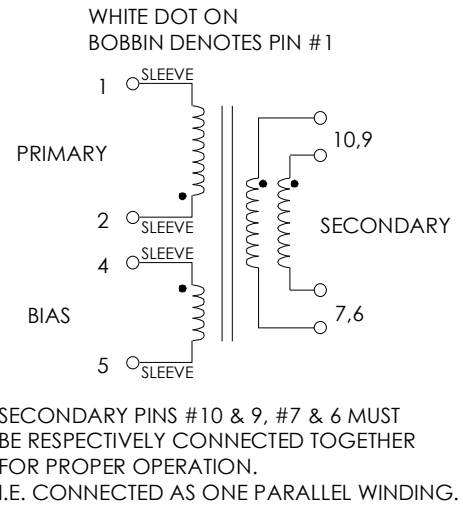


**TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C**  
 SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS  
 PWR-TOP204YAI. REFER TO APPLICATION CIRCUITS OF FIGURE 3A OR 3B.

PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	967	1075	1183	μHY
TURN RATIO'S: SEC (1,1,12-7,8) : PRIMARY (3-1) BIAS (6-5) : PRIMARY (3-1)	-----	1: 9.182	-----	± 4%
PRI LEAKAGE IND. (SEC SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	-----	-----	26.0	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 ----- ----- ----- ----- -----	----- 15.0 ----- ----- 0.20 0.20 50.0	265 ----- 7.33 7.5 ----- ----- -----	Vac Vdc Amps Amps ±% ±% ±mV

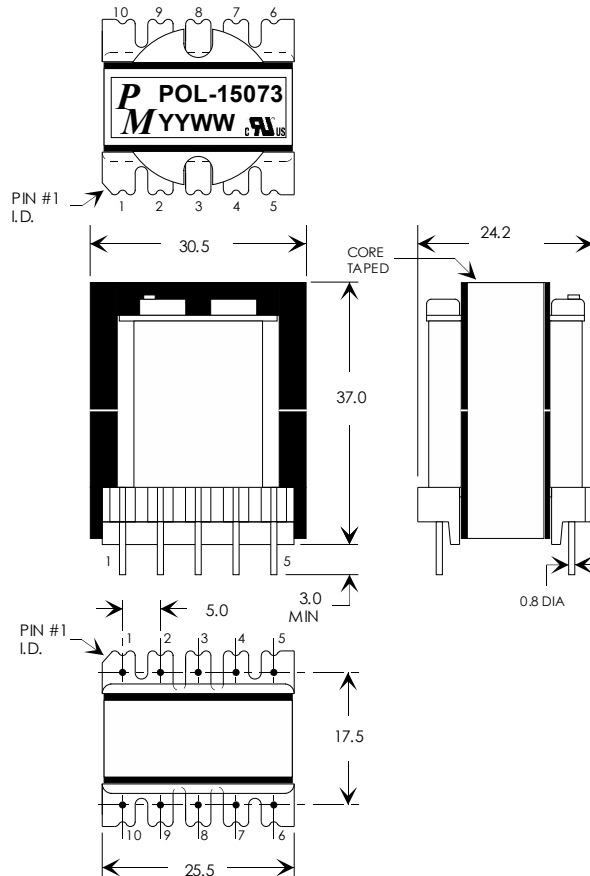
**FIGURE 1: SCHEMATIC DIAGRAM**



**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-## UL FILE #E177139).

(1) REFER TO APPLICATION CIRCUIT OF FIGURE 3A.  
 FOR 13.8V, 85-132VAC VERSION REFER TO CIRCUIT & TABLE OF FIGURE 3B.

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



**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: POL-15073	REVISION: 05/05/20
ENGR: PETER PHAM	REF: TOP227Y/226Y
APPD: TOM O'NEIL	SHEET: 1 OF 3

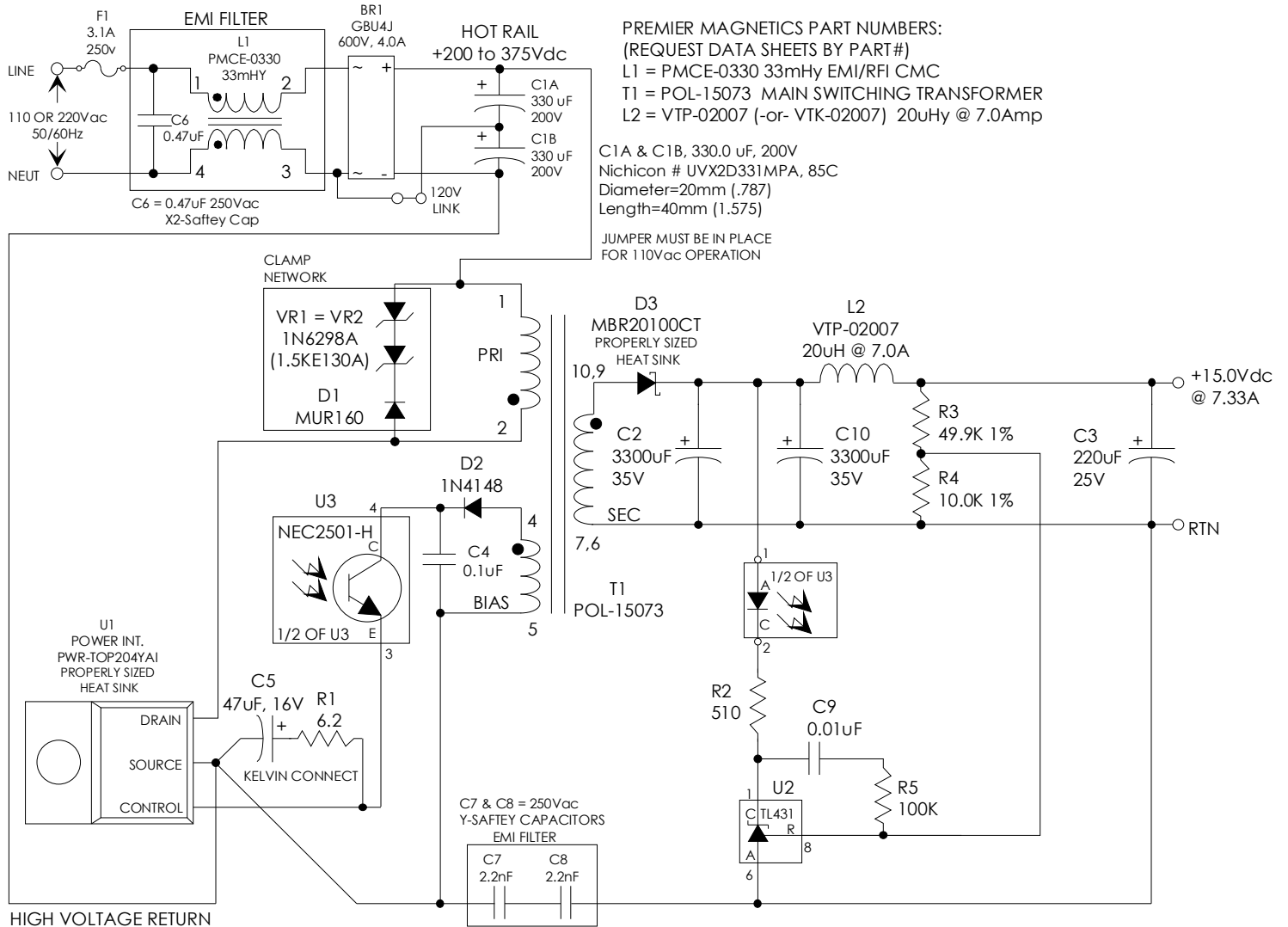
## APPLICATION NOTES FOR 15.0V @ 7.33A

Premier Magnetics' POL-15073 Switch Mode Transformer was designed for use with Power Integrations, Inc. PWR-TOP204YA1 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-15073 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 doubler input high precision 110 watt application circuit utilizing Power Integrations PWR-TOP204 switching regulator in the flyback buck-boost configuration. The component values listed are intended for reference purposes only. Properly sized heat sinks for the TOP2XX & D3 as well as proper thermal management of the clamp network are critical requirements for efficient and reliable operation. The TVS clamp VR1 & VR2 will need to be modified based on actual end circuit temperature rise considerations.

**FIGURE 3: TYPICAL APPLICATION CIRCUIT**



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

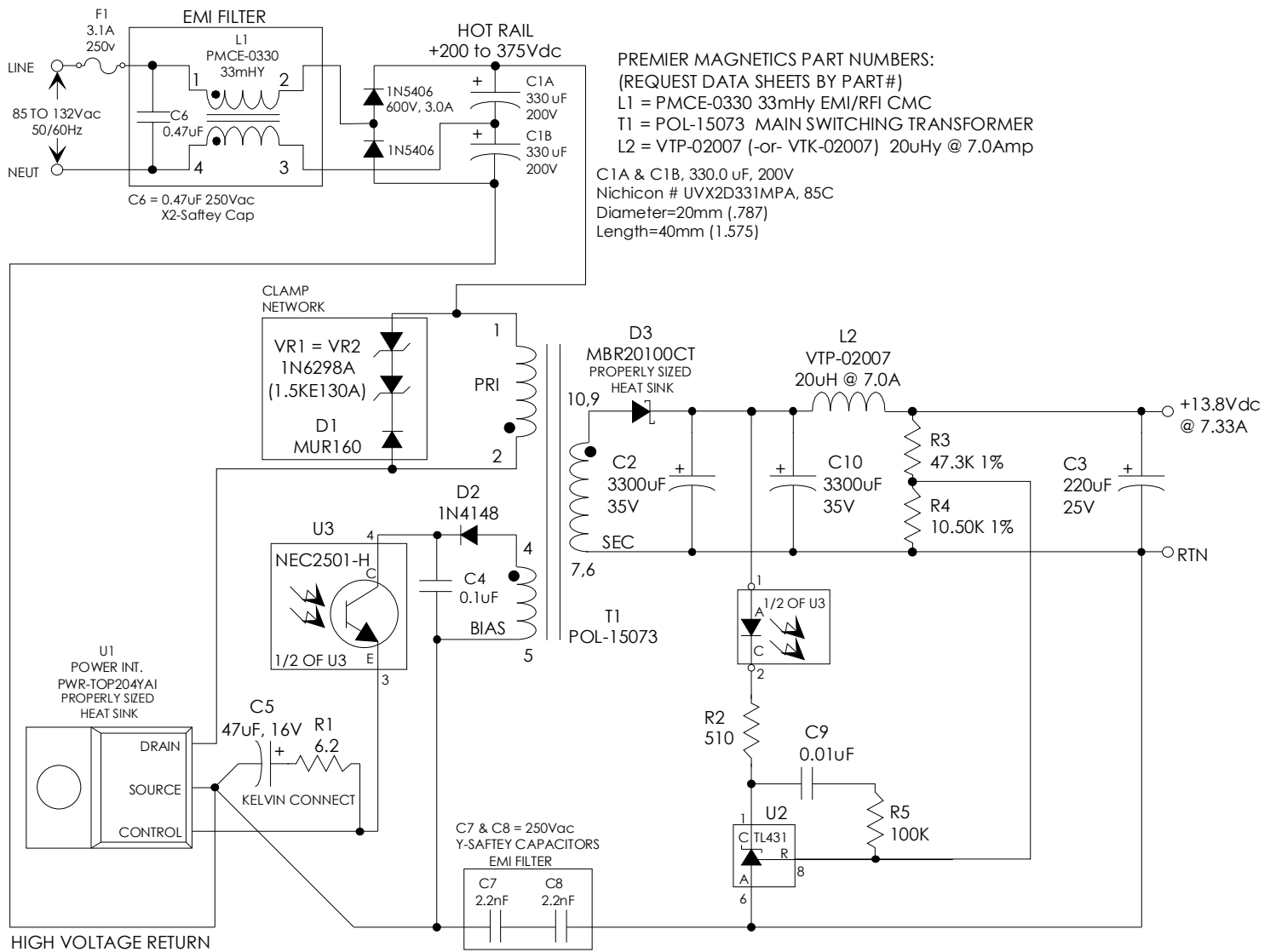
TRANSFORMER CONTROL DRAWING	
PREMIER P/N: POL-15073	REVISION: 05/05/20
ENGR: PETER PHAM	REF: TOP227Y/226Y
APPD: TOM O'NEIL	SHEET: 2 OF 3

# APPLICATION NOTES FOR 13.8V @ 7.30A

Below is an 85 to 132Vac input voltage doubler, high precision 100 watt application circuit utilizing Power Integrations PWR-TOP204 switching regulator in the flyback buck-boost configuration. The component values listed are intended for reference purposes only. Properly sized heat sinks for the TOP2XX & D3 as well as proper thermal management of the clamp network are critical requirements for efficient and reliable operation. The TVS clamp VR1 & VR2 will need to be modified based on actual end circuit temperature rise considerations.

PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
FIGURE 3B CIRCUIT PARAMETERS:				
AC LINE VOLTAGE 47/400 Hz	85	-----	135	Vac
OUTPUT VOLTAGE		13.8		Vdc
OUTPUT CURRENT CONTINUOUS	0.0	-----	7.30	Amps
OUTPUT CURRENT PEAK	-----	-----	7.50	Amps
LINE REGULATION (85 TO 132Vac)	-----	0.20	-----	±%
LOAD REGULATION 10-100%	-----	0.20	-----	±%
RIPPLE	-----	50.0	-----	±mV

**FIGURE 3B: TYPICAL APPLICATION CIRCUIT**



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-15073	REVISION: 05/05/20
ENGR: PETER PHAM	REF: TOP227Y/226Y
APPD: TOM O'NEIL	SHEET: 3 OF 3