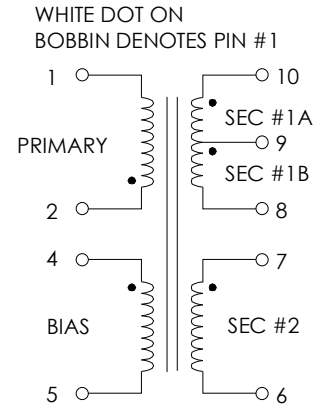


**TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C**  
 SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS  
 PWR-TOP244YA1. REFER TO APPLICATION CIRCUIT OF FIGURE 3.

PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	700	760	800	μHY
TURN RATIO'S: SEC #1 (10-8) : PRIMARY (2-1) SEC #2 (7-6) : PRIMARY (2-1) BIAS (4-5) : PRIMARY (2-1)	-----	1: 2.167 1: 7.43 1: 40.4	-----	± 4% ± 4% ± 4%
PRI LEAKAGE IND. (SEC SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	-----	-----	30	μHY
HIPOT: PRIMARY TO SECONDARY BIAS TO SECONDARY	3000 3000	----- -----	----- -----	Vrms Vrms
APP CIRCUIT PARAMETERS: (1) AC LINE VOLTAGE 47/400 Hz SEC #1A OUTPUT VOLTAGE SEC #1A OUTPUT CURRENT SEC #1B OUTPUT VOLTAGE SEC #1B OUTPUT CURRENT SEC #2 REGULATED OUTPUT SEC #2 OUTPUT CURRENT	85 ----- 25.0 ----- 25.0 ----- 0.0	----- 30.0 ----- 30.0 ----- 18 -----	265 ----- 750 ----- 50 ----- 150	Vac Vdc mA Vdc mA Vdc mA

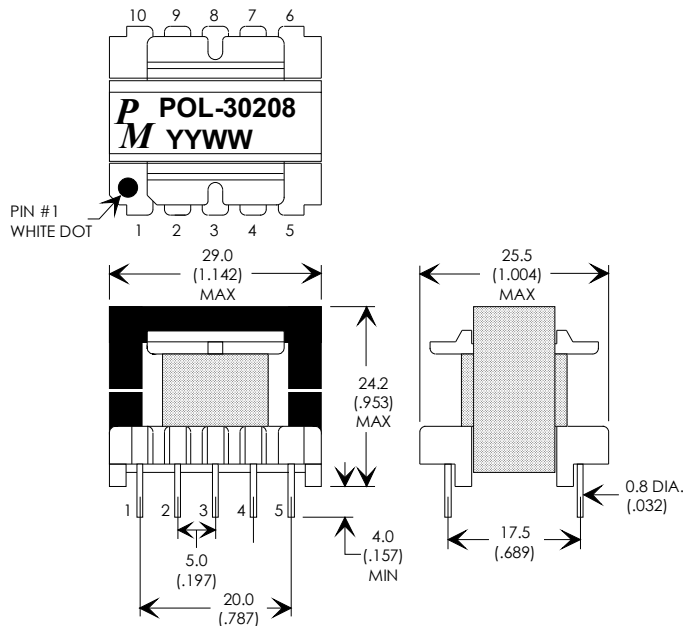
(1) REFER TO APPLICATION CIRCUIT OF FIGURE 3.

**FIGURE 1: SCHEMATIC DIAGRAM**



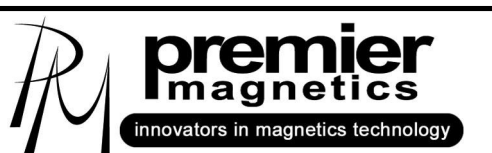
**NOTE1:**  
**REINFORCED INSULATION SYSTEM, UL1950, IEC950, CSA-950:**  
 A) ALL MATERIALS MEET "UL", "CSA" & "IEC" REQUIREMENTS  
 B) UL 1950, CSA-950, IEC742/950 & VDE.  
 C) TRIPLE BASIC INSULATED SECONDARY.  
 D) DESIGNED TO MEET ≥6.2mm CREEPAGE REQUIREMENTS.  
 E) VARNISH FINISHED ASSEMBLY.  
 F) UL CLASS (B) 130 INSULATION SYSTEM PM130-R1, PM130-H1, PM130-H1A (UL FILE #E177139) OR ANY UL AUTHORIZED CLASS (B) INSULATION SYSTEM.

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



REV.	DESCRIPTION OF CHANGES	BY
03/06/00	ORIGINAL RELEASE	PP
05/05/00	UPDATED TO UL CLASS (B) INSULATION SYSTEM, ADD LEAKAGE IND.	MD
08/31/04	UPDATE REV	PP
05/07/09	correct instruction	PP

**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-30208	REVISION: 05/07/09
DRAWN BY: PETER PHAM	REF: PWR-TOPxxxY
SCALE: NONE	SHEET: 1 OF 2

# APPLICATION NOTES

Premier Magnetic's POL-30208 Switch Mode Transformer was designed for use with Power Integrations, Inc. PWR-TOP244YA1 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-30208 transformer has been optimized to provide maximum power throughput.

The PWR-TOPXXX series from Power Integrations, Inc. are self contained 132KHz 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 30 watt application circuit utilizing Power Integrations PWR-TOP244 switching regulator in the flyback buck-boost configuration. The component values listed are intended for reference purposes only. A properly sized heat sink for the PWR-TOPxxx is required for efficient and reliable operation. Soft start capacitor  $C_{ss}$  is optional and application dependent.

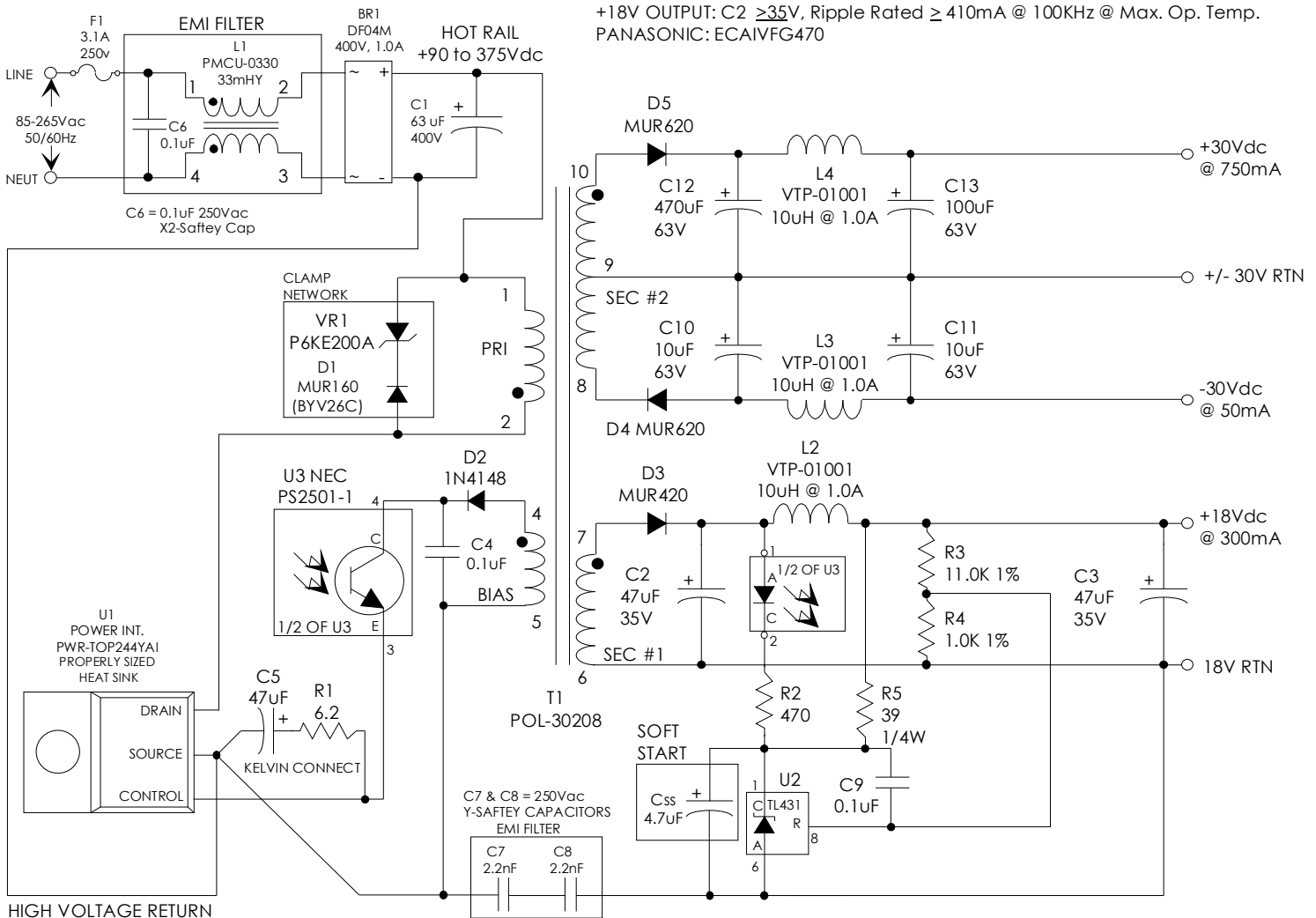
**FIGURE 3: TYPICAL APPLICATION CIRCUIT**

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

- L1 = PMCU-0330 33mHy EMI/RFI CMC
- T1 = POL-30208 MAIN SWITCHING TRANSFORMER
- L2 = VTP-01001 10uHy, 1.0Amp INDUCTOR

ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:

- +30V OUTPUT: C12  $\geq 63V$ , Ripple Rated  $\geq 900mA$  @ 100KHz @ Max. Op. Temp. PANASONIC: ECA1JFG471
- 30V OUTPUT: C10  $\geq 63V$ , Ripple Rated  $\geq 95mA$  @ 100KHz @ Max. Op. Temp. PANASONIC: ECA1JFG100
- +18V OUTPUT: C2  $\geq 35V$ , Ripple Rated  $\geq 410mA$  @ 100KHz @ Max. Op. Temp. PANASONIC: ECAIVFG470



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-30208	REVISION: 05/07/09
DRAWN BY: PETER PHAM	REF: PWR-TOPxxxY
SCALE: NONE	SHEET: 2 OF 2