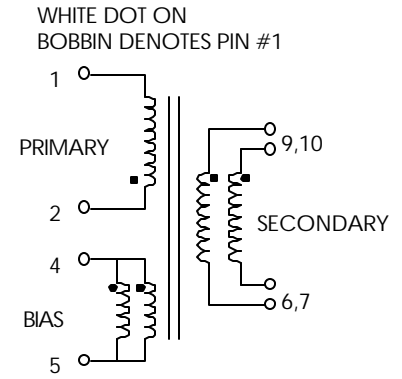


**TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C**  
 SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS  
 TOP226Y. REFER TO APPLICATION CIRCUITS OF FIGURE 3A OR 3B.  
 (Equivalent to T1204 on PWR-ST204A Demo Board)

PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	565	628	691	μHY
TURN RATIO'S: SEC (9,10-6,7) : PRIMARY (2-1) BIAS (4-5) : PRIMARY (2-1)	-----	1:7.50 1:9.00	-----	±3% ±3%
PRI LEAKAGE IND. (SEC SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	-----	12.5	18.0	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 ----- 0.020 ----- ----- ----- ----- -----	----- 15.0 ----- 0.20 0.20 50.0	265 ----- 2.0 3.0 ----- ----- -----	Vac Vdc Amps Amps ±% ±% ±mV

**FIGURE 1: SCHEMATIC DIAGRAM**

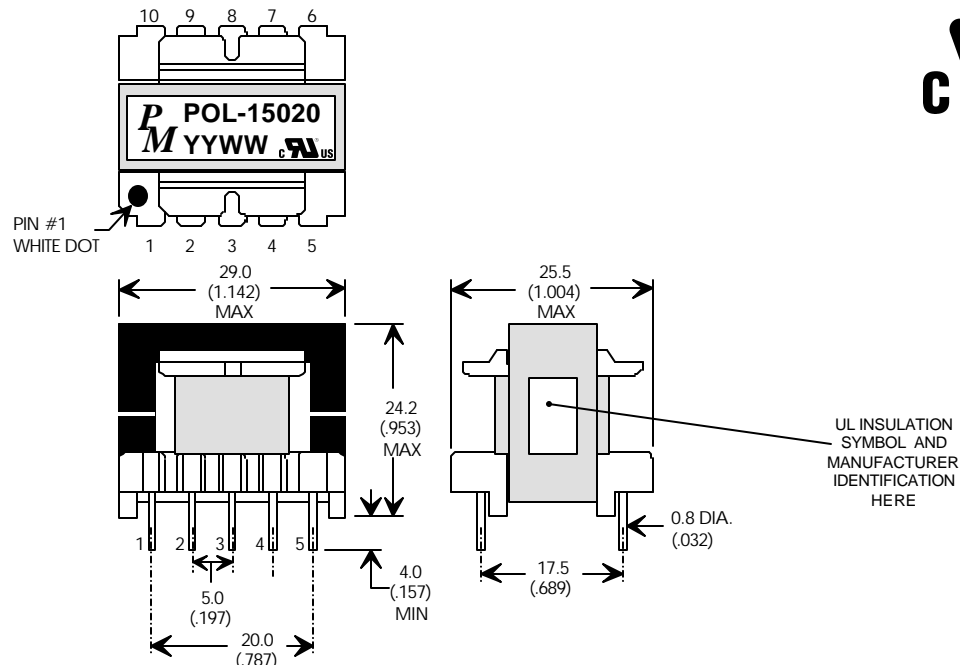


WHITE DOT ON BOBBIN DENOTES PIN #1  
 SECONDARY PINS #9 & 10, #6 & 7 MUST BE RESPECTIVELY CONNECTED TOGETHER FOR PROPER OPERATION.  
 I.E. CONNECTED AS ONE PARALLEL WINDING.

**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 3A.  
 FOR 12.0V @ 2.5A VERSION REFER TO CIRCUIT & TABLE OF FIGURE 3B.

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



REV.	DESCRIPTION OF CHANGES	BY
03/16/95	ORIGINAL RELEASE	TO
06/15/96	UPDATED SCHEMATIC (FIGURE 3) PART NUMBERS, TOP226 UPDATE	TO
02/22/99	ADDED VER-12025 APPLICATION NOTES & CIRCUIT & UL UPDATE	TO
04/20/99	UPDATED TO UL CLASS (B) INSULATION SYSTEM	MD
01/19/01	CHANGED BIAS TURN RATIO PIN# FROM 3-4 TO 4-5	LL

EE, E128/11, 10-PIN VERTICAL BOBBIN



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

**FLYBACK TRANSFORMER CONTROL DRAWING**

PREMIER P/N: POL-15020	REVISION: 01/19/01
DRAWN BY: TOM O'NEIL	REF: TOP226Y
SCALE: NONE	SHEET: 1 OF 7

## APPLICATION NOTES FOR 15.0V @ 2.00A

Premier Magnetics' POL-15020 Switch Mode Transformer was designed for use with Power Integrations, Inc. TOP226Y 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-15020 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 30 watt application circuit utilizing Power Integrations TOP226Y 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 soft start capacitor C<sub>ss</sub> is optional depending on the specific application. Simpler topology is possible depending on the line/load regulation required.

**FIGURE 3A: TYPICAL APPLICATION CIRCUIT**

**PREMIER MAGNETICS PART NUMBERS:**

(REQUEST DATA SHEETS BY PART#)

- L1 = PMCU-0330 16mHy 1.5A EMI/RFI CMC
- T1 = POL-15020 MAIN SWITCHING TRANSFORMER
- L2 = VTP-01002 10uHy@2.0A INDUCTOR

**ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:**

- C1: ≥ 400 V, Ripple Rated ≥ 320mA @ 120Hz @ Max. Operating Temp.  
(Nichicon P/N LGK2G101MHSZ, 105C)
- C2: ≥ 63V, Ripple Rated ≥ 2350mA @ 100KHz @ Max. Op. Temp.  
(Panasonic P/N EEUFA1V122, 105C)

