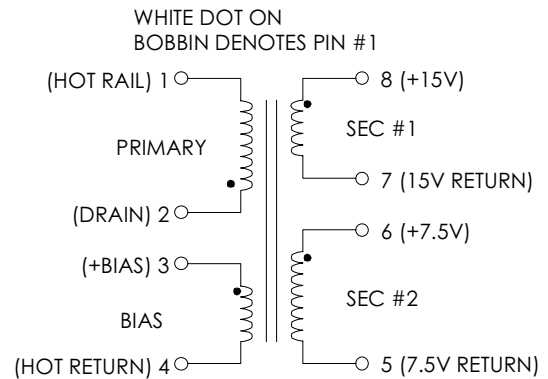


TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C

SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS TOP223Y. REFER TO APPLICATION CIRCUIT OF FIGURE 3.

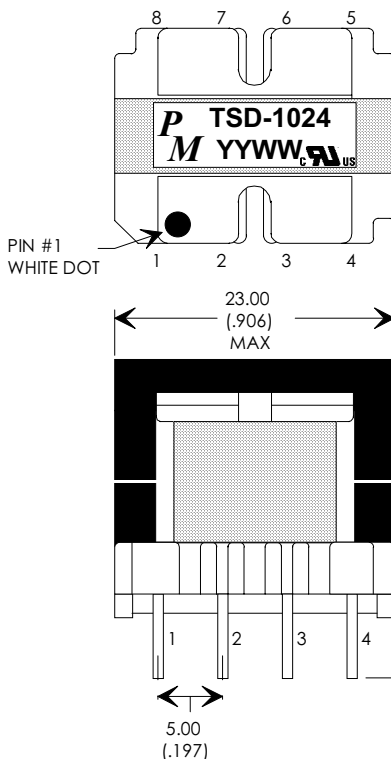
PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	630	700	770	μHY
TURN RATIO'S: SEC #1 (8-7) : PRIMARY (2-1) SEC #2 (6-5) : PRIMARY (2-1) BIAS (3-4) : PRIMARY (2-1)	-----	1: 6.625 1:13.250 1: 8.834	-----	± 3% ± 3% ± 3%
PRI LEAKAGE IND. (SEC'S SHORT) 0.250Vrms @ 100KHz	-----	-----	22	μHY
HIPOT: PRIMARY & BIAS TO SECONDARY'S SECONDARY #1 TO SECONDARY #2	3000 500	----- -----	----- -----	Vrms Vrms
APP CIRCUIT PARAMETERS: ⁽¹⁾ AC LINE VOLTAGE 47/400 Hz SEC #1 OUTPUT VOLTAGE SEC #1 OUTPUT mA CONTINUOUS SEC #1 LOAD REGULATION 10-100% SEC #2 OUTPUT VOLTAGE ⁽²⁾ SEC #2 OUTPUT mA CONTINUOUS SEC #2 LOAD REGULATION 10-100% LINE REGULATION (85 TO 265Vac) RIPPLE EACH OUTPUT TRANSFORMER TEMPERATURE RISE	85 20 ----- 200 ----- ----- ----- ----- -----	----- 15.0 ----- 8.0 ⁽³⁾ 7.5 ----- 0.50 0.20 50.0 20.0	265 260 ----- 1100 ----- ----- ----- -----	Vac Vdc mA ±% Vdc mA ±% ±% ±mV °C

FIGURE 1: SCHEMATIC DIAGRAM**NOTE 1: REINFORCED INSULATION SYSTEM, UL1950, IEC950, CSA-950:**

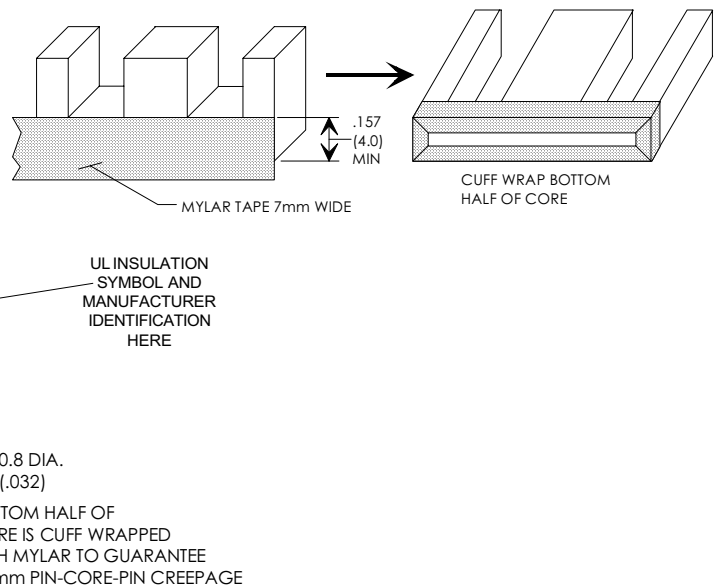
- A) ALL MATERIALS MEET "UL", "CSA" & "IEC" REQUIREMENTS
 B) TRIPLE BASIC INSULATED SECONDARY.
 C) DESIGNED TO MEET ≥6.2mm CREEPAGE REQUIREMENTS.
 D) VARNISH FINISHED ASSEMBLY.
 E) UL1950 & CSA-950 CERTIFIED: FILE #E162344.
 F) UL CLASS (B) 130 INSULATION SYSTEM PM130-R1, PM130-H1, PM130-H1A (UL FILE #E177139) OR ANY UL AUTHORIZED CLASS (B) INSULATION SYSTEM.

NOTE 2:

- (1) REFER TO APPLICATION CIRCUIT OF FIGURE 3.
 (2) SEC #2 IS REGULATED OUTPUT.
 (3) SEC #1 IS UNREGULATED OUTPUT

**FIGURE 2: PHYSICAL DIMENSIONS mm (INCHES)****NOTE 3:**

- A) BOTTOM HALF OF CORE IS CUFF WRAPPED PRIOR TO ASSEMBLY. THIS GUARANTEES 6.2mm CREEPAGE PIN-CORE-PIN



EI22/19/6, 8-PIN VERTICAL BOBBIN

REV.	DESCRIPTION OF CHANGES	BY
04/30/97	INITIAL RELEASE	TO
06/25/97	UPDATED TABLE 1, NO OTHER CHANGES	TO
04/19/99	UPDATED TO UL CLASS (B) INSULATION SYSTEM	MD

FLYBACK TRANSFORMER CONTROL DRAWING

PREMIER P/N: TSD-1024	REVISION: 04/19/99
DRAWN BY: TOM O'NEIL	REF: TOP223Y
SCALE: NONE	SHEET: 1 OF 6

APPLICATION NOTES

Premier Magnetic's TSD-1024 Switch Mode Transformer was designed for use with Power Integrations, Inc. TOP223Y 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-1024 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 Dual Output 14 watt application circuit utilizing Power Integrations TOP223 switching regulator in the flyback buck-boost configuration. The component values listed are intended for reference purposes only. Clamp Resistor R6 is necessary to prevent possible destructive voltage runaway if the 15V output can ever be run under a no load condition.

FIGURE 3: TYPICAL APPLICATION CIRCUIT

PREMIER MAGNETICS PART NUMBERS:

(REQUEST DATA SHEETS BY PART#)

L1 = PMCU-0330 33mHy EMI/RFI CMC

T1 = TSD-1024 MAIN SWITCHING TRANSFORMER

L2 = VTP-01001 10uHy@1.0A INDUCTOR

ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:

C1 : $\geq 400V$, Ripple Rated $\geq 140mA$ @ 120Hz @ Max. Operating Temp.

(Nichicon P/N UVX2G330MHA, 85C)

C6 : $\geq 16V$, Ripple Rated $\geq 1184mA$ @ 100KHz @ Max. Op. Temp.

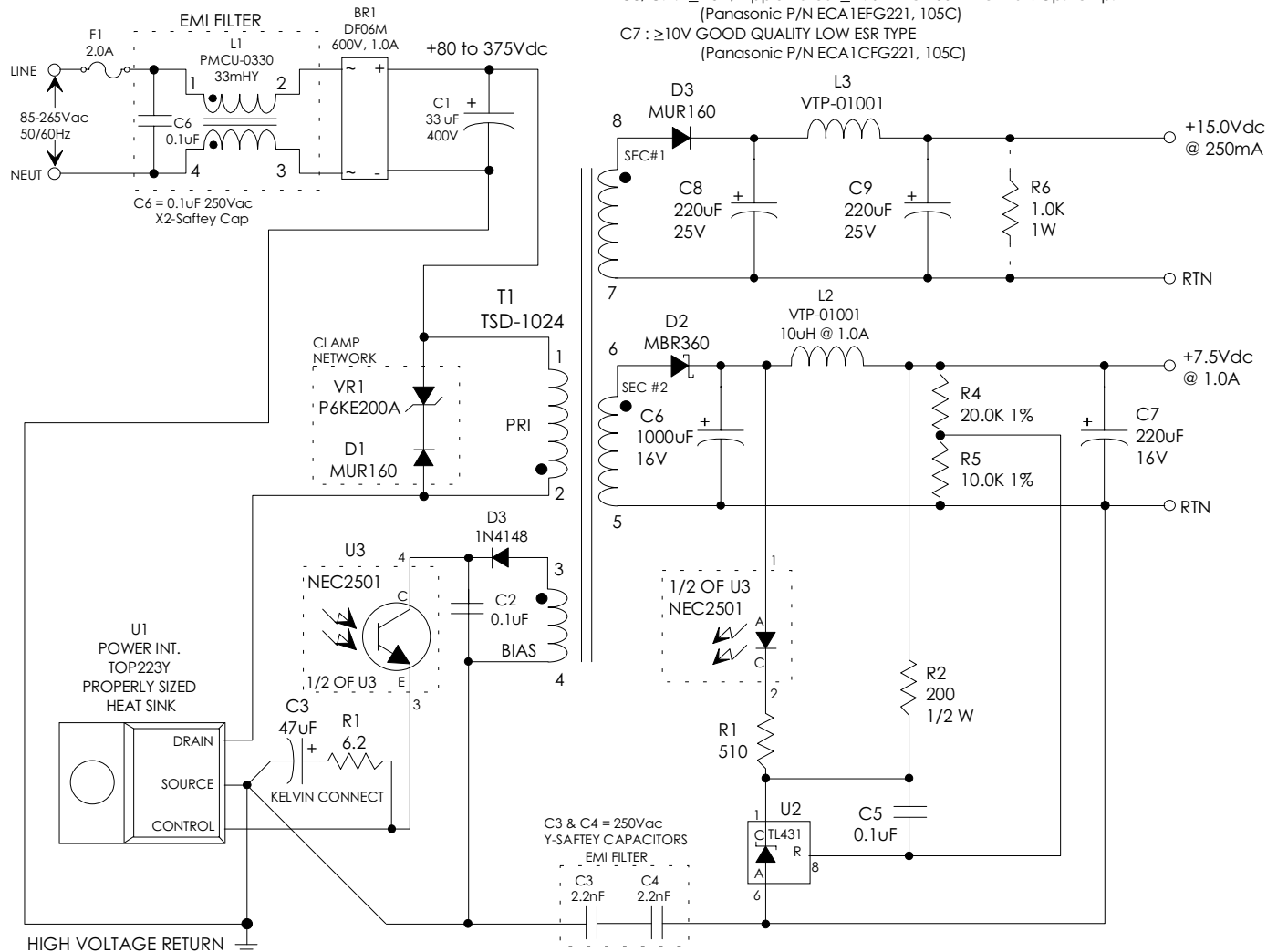
(Panasonic P/N ECA1EFG102, 25WVDC, 105C)

C8, C9 : $\geq 25V$, Ripple Rated $\geq 296mA$ @ 100KHz @ Max. Op. Temp.

(Panasonic P/N ECA1EFG221, 105C)

C7 : $\geq 10V$ GOOD QUALITY LOW ESR TYPE

(Panasonic P/N ECA1CFG221, 105C)



**Premier
Magnetics Inc.**

"INNOVATORS IN MAGNETICS TECHNOLOGY"

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MM
DIMENSIONAL TOLERANCES ARE:
DECIMALS ANGLES
.X $\pm .25$ $\pm 0^\circ 30'$
.XX $\pm .15$
DO NOT SCALE DRAWING

FLYBACK TRANSFORMER CONTROL DRAWING

PREMIER P/N: TSD-1024	REVISION: 04/19/99
DRAWN BY: TOM O'NEIL	REF: TOP223Y
SCALE: NONE	SHEET: 2 OF 6