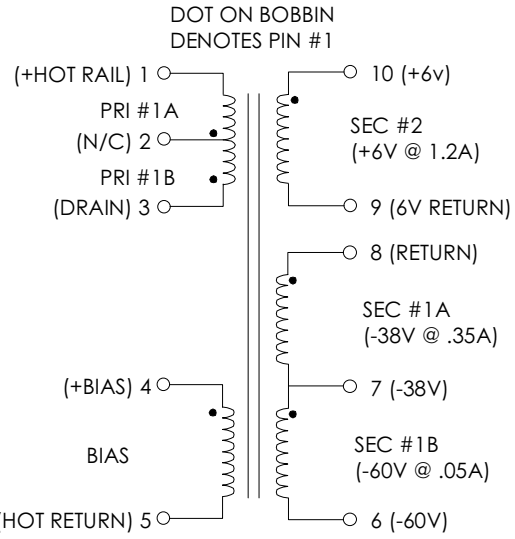
TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C

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

PARAMETER	SPEC LIMITS MIN.	TYP.	MAX.	UNITS
PRIMARY INDUCTANCE (3-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	900	1000	1100	µHY
TURN RATIO'S: BIAS (4-5) : PRIMARY (3-1) FULL SEC #1 (8-6) : PRIMARY (3-1) SEC #1B (7-6) : PRIMARY (3-1) SEC #2 (9-10) : PRIMARY (3-1)	 -------- -------- -------- --------	 1:10.570 1: 2.176 1: 6.167 1:18.500	 -------- -------- -------- --------	 ±4% ±4% ±4% ±4%
PRI LEAKAGE IND. (SEC SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	--------	--------	30.0	µHY
HIPOT: PRIMARY & BIAS TO SECONDARIES PRIMARY TO BIAS	 3000 600	 -------- --------	 -------- --------	 Vrms Vrms
APP CIRCUIT PARAMETERS: (1) AC LINE INPUT VOLTAGE: (2) DC HOT RAIL VOLTAGE: (2) SEC #1A @ 350mA SEC #1B @ 50mA SEC #2 @ 1200mA PEAK PRIMARY CURRENT	 90 210	 110/220 -------- -38 -60 6	 265 375 800	 Vrms VDC VDC VDC VDC mA

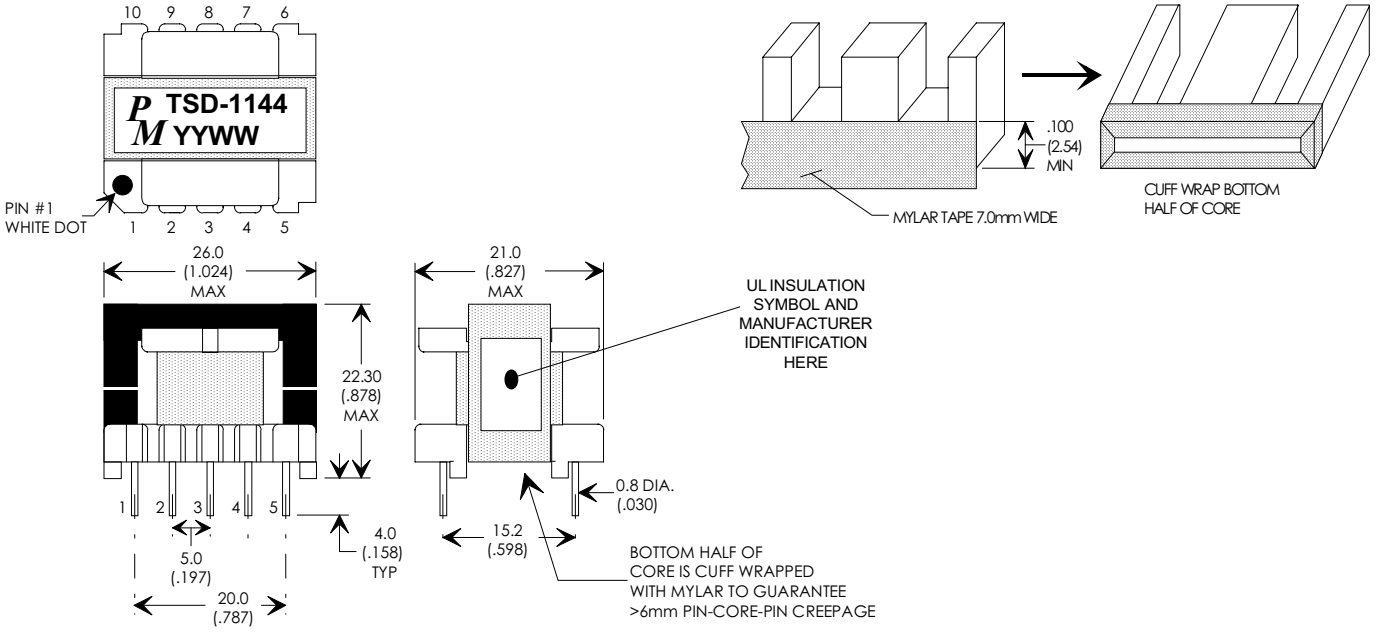
1) REFER TO VOLTAGE DOUBLER APPLICATION CIRCUIT OF FIGURE 3.
2) DOUBLER LINK MUST BE IN PLACE FOR 110/120V OPERATION.

FIGURE 1: SCHEMATIC DIAGRAM



NOTE1:
MARGIN WOUND INSULATION SYSTEM (UL1950, IEC950):
A) ALL MATERIALS MEET "UL", "CSA" & "IEC" REQUIREMENTS
B) MARGIN WOUND FOR ≥5mm CREEPAGE REQUIREMENTS
C) PIN-CORE-PIN CLEARANCE >6mm
D VARNISH FINISHED ASSEMBLY.
E 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
01/26/98	ORIGINAL RELEASE	TO
07/06/99	UPDATE TO UL CLASS (B) 130 INSUL. SYS. & SLEEVE PER CUSTOMER	MD
08/19/99	ADDED CUFF WRAP TO MEET 6mm PIN-CORE-PIN CREEPAGE	MD

EE2425 (EI25), 10-PIN VERTICAL BOBBIN

Premier Magnetics Inc.
"INNOVATORS IN MAGNETICS TECHNOLOGY"

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: TSD-1144	REVISION: 08/19/99
DRAWN BY: TOM O'NEIL	REF: TOP223Y
SCALE: NONE	SHEET: 1 OF 6

APPLICATION NOTES

Premier Magnetics TSD-1144 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-1144transformer has been optimized to provide maximum power throughput.

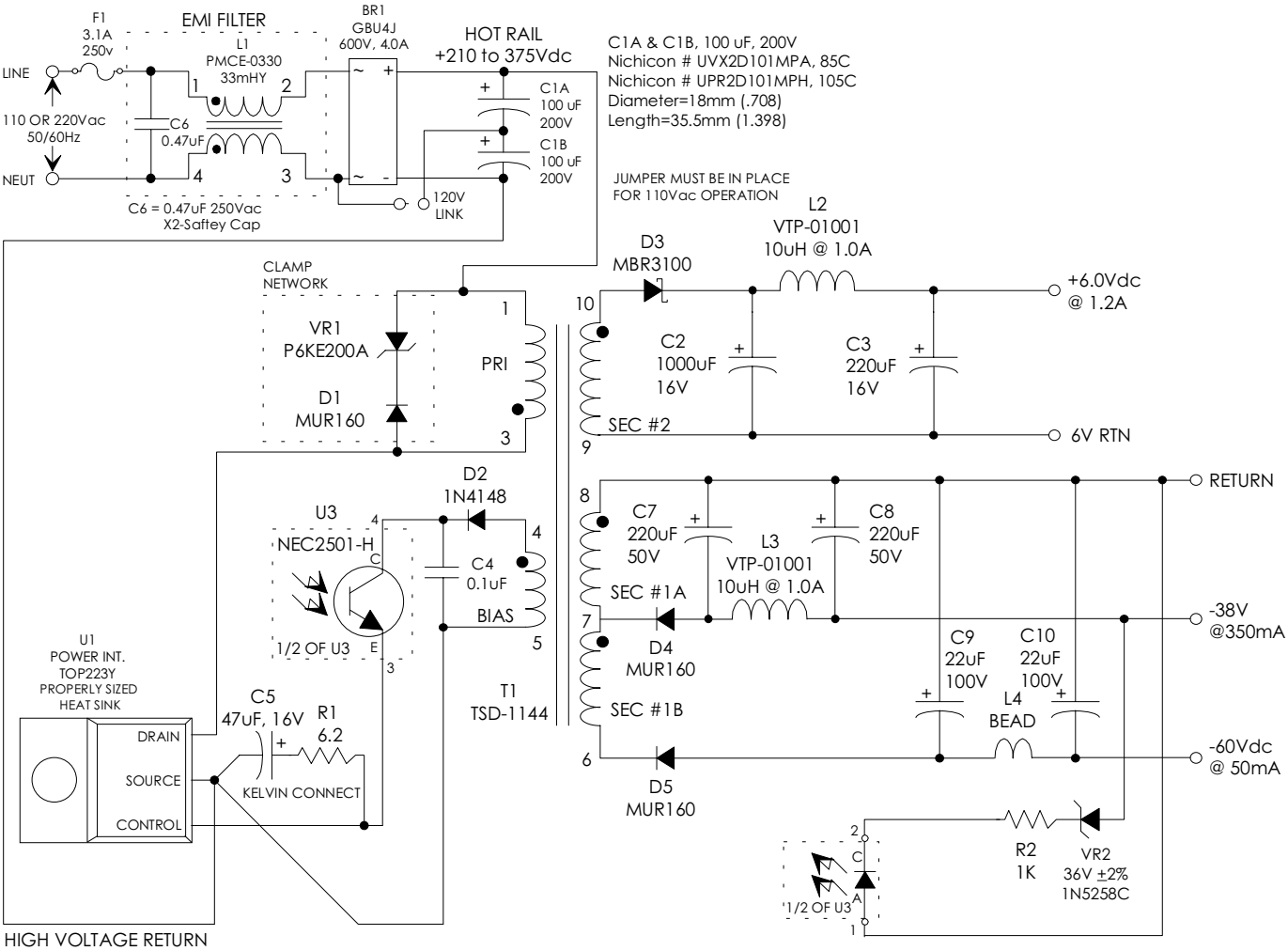
The TOPXXX series from Power Integrations, Inc. are self contained 100KHz three terminal voltage controlled PWM switching regulators. This part contains all necessary functions for an off-line switched mode control DC power source. This switching regulator provides a very simple solution for off-line designs. The inductors and transformer used with the 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 24 watt application circuit utilizing Power Integrations TOP223Y switching regulator in the flyback buck-boost configuration. Careful breadboard evaluation must be completed to define overall circuit performance in the actual application. The component values listed are intended for reference purposes only.

FIGURE 3: TYPICAL APPLICATION CIRCUIT

ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:
+6V OUTPUT: C2 ≥10V, Ripple Rated ≥ 940mA @ 100KHz @ Max. Op. Temp.
-39V OUTPUT: C7 ≥50V, Ripple Rated ≥ 275mA @ 100KHz @ Max. Op. Temp.
-60V OUTPUT: C9 ≥100V, Ripple Rated ≥ 40mA @ 100KHz @ Max. Op. Temp.
C2 = 1000uF, 16V = PANASONIC ECA1CFG102
C3 = 220uF, 16V = PANASONIC ECA1CFG221
C7, C8 = 220uF, 50V = PANASONIC ECA1HFG221
C9, C10 = 22uF, 100V = PANASONIC ECEA2A220

PREMIER MAGNETICS PART NUMBERS:
(REQUEST DATA SHEETS BY PART#)
L1 = PMCE-0330 33mHy EMI/RFI CMC
T1 = TSD-1144 MAIN SWITCHING TRANSFORMER
L2, L3 = VTP01001, 10uHY @ 1A



Premier Magnetics Inc. "INNOVATORS IN MAGNETICS TECHNOLOGY"	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM DIMENSIONAL TOLERANCES ARE: DECIMALS .X ± .25 .XX ± .15 ANGLES ±0° 30' DO NOT SCALE DRAWING	**FLYBACK TRANSFORMER CONTROL DRAWING**
		PREMIER P/N: TSD-1144 — REVISION: 08/19/99
		DRAWN BY: TOM O'NEIL — REF: TOP223Y
		SCALE: NONE — SHEET: 2 OF 6