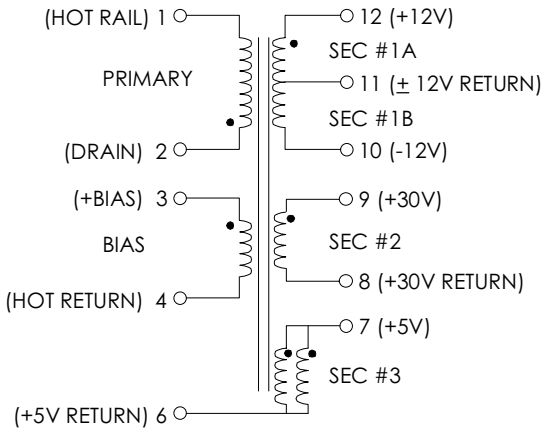
TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C

SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS PWR-TOP201YAI. REFER TO APPLICATION CIRCUITS OF FIGURE 3.

PARAMETER	SPEC LIMITS MIN.	TYP.	MAX.	UNITS
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	1700	2000	2300	µHY
TURN RATIO'S: SEC#1 (12-10CT) : PRIMARY (2-1) SEC#2 (9-8) : PRIMARY (2-1) SEC#3 (7-6) : PRIMARY (2-1) BIAS (3-4) : PRIMARY (2-1)	-------- -------- -------- --------	1: 2.857 1: 2.500 1:16.000 1: 5.714	-------- -------- -------- --------	± 4% ± 4% ± 4% ± 4%
PRI LEAKAGE IND. (SEC'S SHORTED) FREQUENCY = 100 KHZ @ .250Vrms	--------	15.0	20.0	µHY
HIPOT: PRIMARY & BIAS TO SECONDARIES	3000	--------	--------	Vrms
FIGURE 3 CIRCUIT PARAMETERS: (1) AC LINE VOLTAGE 47/400 Hz SEC#1 REGULATED OUTPUT VOLTAGE OUTPUT CURRENT CONTINUOUS SEC#2 REGULATED OUTPUT VOLTAGE OUTPUT CURRENT CONTINUOUS SEC#3 REGULATED OUTPUT VOLTAGE OUTPUT CURRENT CONTINUOUS RIPPLE Vp-p, ANY OUTPUT	 85 -------- 10 -------- 5 -------- 0 --------	 -------- 12.0 ------- 30.0 -------- 5.0 -------- 10	 265 -------- 250 -------- 50 -------- 1000 20	 Vac ±Vdc ±mA Vdc mA Vdc mA ±mV

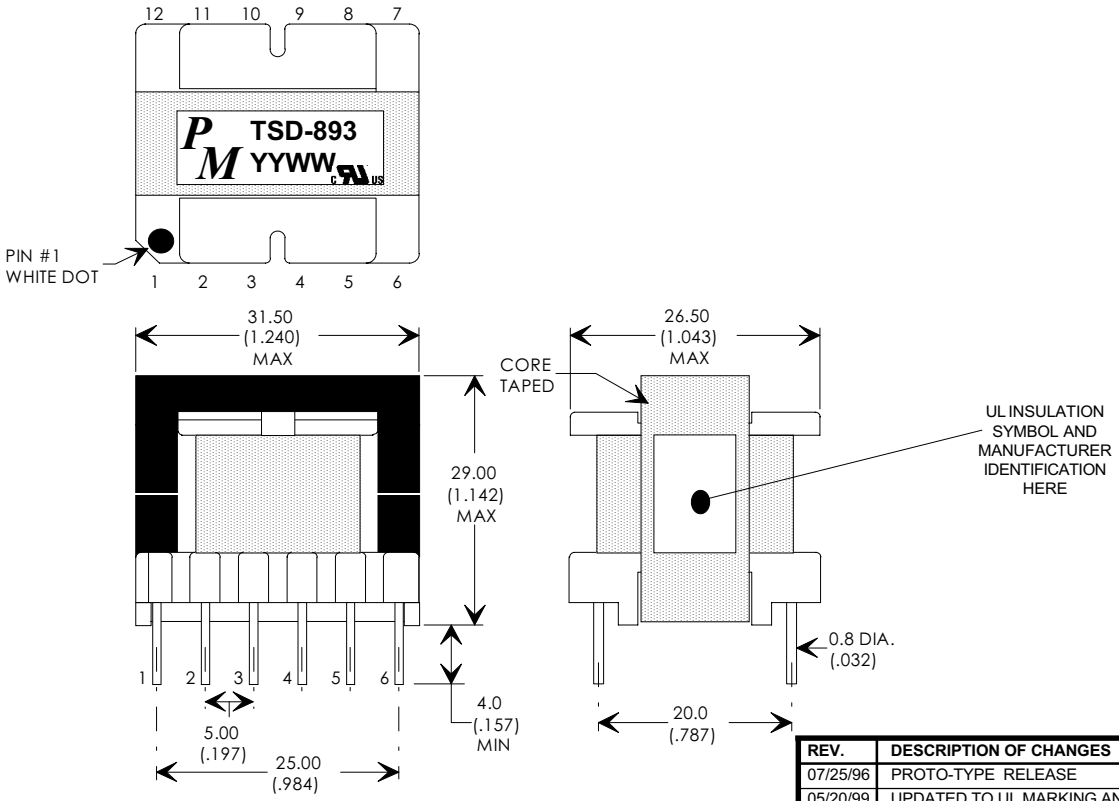
(1) REFER TO APPLICATION CIRCUIT OF FIGURE 3.

FIGURE 1: SCHEMATIC DIAGRAM



NOTE1:
REINFORCED INSULATION SYSTEM, UL1950, IEC950, CSA-950:
A) ALL MATERIALS MEET "UL", "CSA" & "IEC" REQUIREMENTS
B) 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-H1A (UL FILE #E177139) OR ANY UL AUTHORIZED CLASS (B) INSULATION SYSTEM.

FIGURE 2: PHYSICAL DIMENSIONS mm (INCHES)



REV.	DESCRIPTION OF CHANGES	BY
07/25/96	PROTO-TYPE RELEASE	TO
05/20/99	UPDATED TO UL MARKING AND CLASS (B) 130 INSULATION SYSTEM	MD

EE30 (FEE30A) -OR- EI30(FEI30), 12-PIN VERTICAL BOBBIN

Premier Magnetics Inc.

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: TSD-893	REVISION: 05/20/99
DRAWN BY: TOM O'NEIL	REF: PWR-TOP201YAI
SCALE: NONE	SHEET: 1 OF 4

APPLICATION NOTES

Premier Magnetics' TSD-893 Switch Mode Transformer was designed for use with Power Integrations, Inc. PWR-TOP201YAI three terminal off-line PWM switching regulator in the Flyback Buck-Boost circuit configuration.

Below is a universal input high precision 14 watt application circuit utilizing Power Integrations PWR-TOP204 switching regulator in the flyback buck-boost configuration. Secondary #3 is used to complete the outer voltage feedback loop thus providing a tightly regulated 5V output. Secondary outputs #1 & #2 drive 3 terminal precision regulators and thus produce tightly regulated ±12V & +30V outputs. The component values listed are intended for reference purposes only.

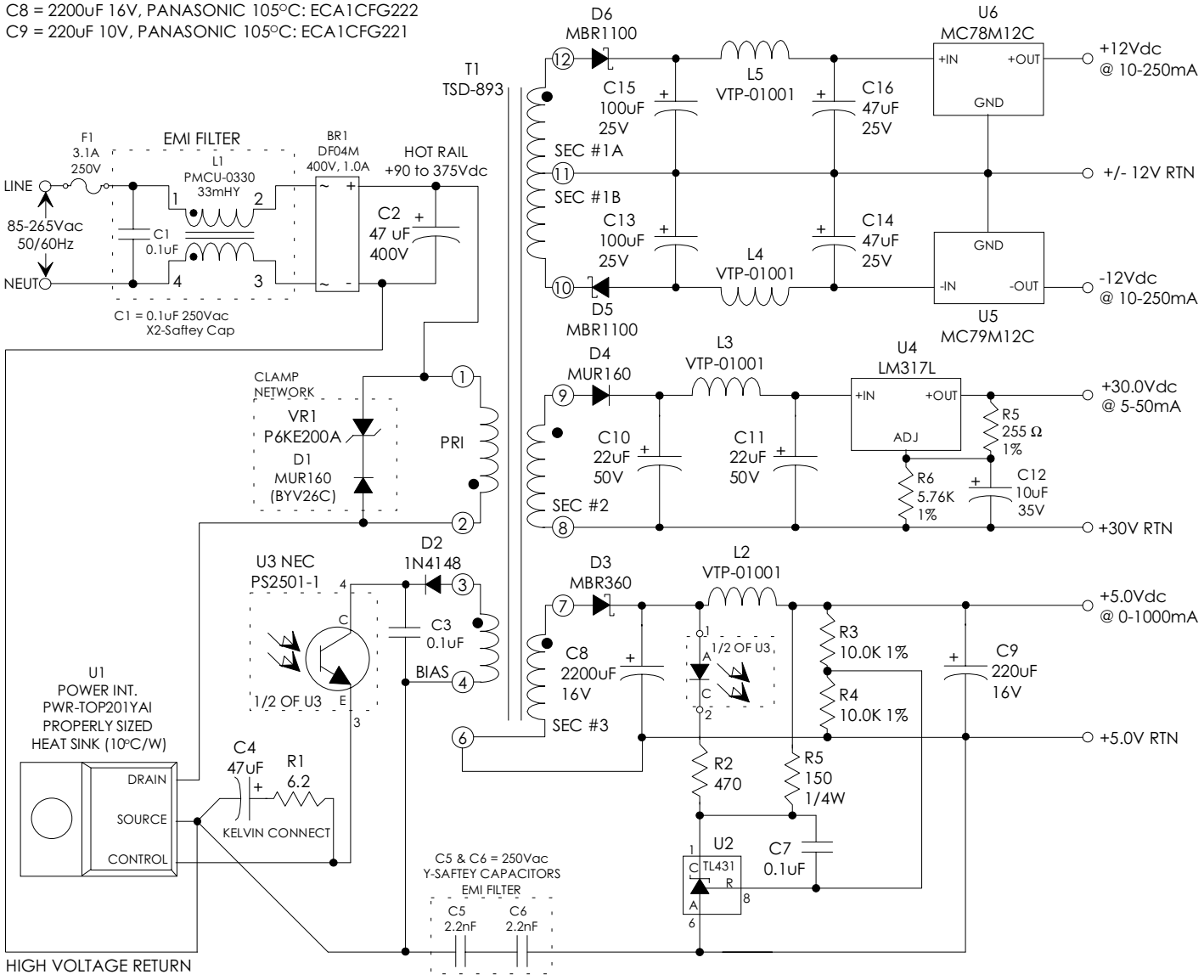
FIGURE 3: TYPICAL APPLICATION CIRCUIT

ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:
C1= 47uF 400V, PANASONIC 105°C: ECEA2GGE470 -OR- NICHICON 105°C: #UPR2G470MHH
±12V OUTPUT: C14, C17 ≥25V, Ripple Rated ≥ 245mA @ 100KHz @ Max. Op. Temp.
C13, C15 = 100uF 25V, PANASONIC 105°C: ECA1EFG101
C14, C16 = 47uF 25V, PANASONIC 105°C: ECA1EFG470

+30V OUTPUT: C11 ≥50V, Ripple Rated ≥ 55mA @ 100KHz @ Max. Op. Temp.
C10, C11 = 22uF 50V, PANASONIC 105°C: ECEA1HGE220
C12 = 10uF 35V, PANASONIC 105°C: ECEA1V100

+5.0V OUTPUT: C9 ≥16V, Ripple Rated ≥ 1200mA @ 100KHz @ Max. Op. Temp.
C8 = 2200uF 16V, PANASONIC 105°C: ECA1CFG222
C9 = 220uF 10V, PANASONIC 105°C: ECA1CFG221

PREMIER MAGNETICS PART NUMBERS:
(REQUEST DATA SHEETS BY PART#)
L1 = PMCU-0330 33mHy EMI/RFI CMC
T1 = TSD-893 MAIN SWITCHING TRANSFORMER
L2-L5 = VTP-01001 10uHy, 1.0 AMP INDUCTOR



Premier Magnetics Inc.	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: TSD-893 — REVISION: 05/20/99
		DRAWN BY: TOM O'NEIL — REF: PWR-TOP201YAI
		SCALE: NONE — SHEET: 2 OF 4