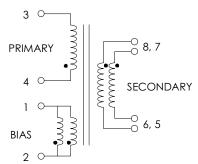
TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C

SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS TOP224P. REFER TO APPLICATION CIRCUIT OF FIGURE 3.

| PARAMETER | SPEC LIMITS MIN. TYP. MAX. | | | UNITS |
|--|----------------------------|----------------------------------|-------------------------|---|
| PRIMARY INDUCTANCE (4-3) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ | 585 | 650 | 715 | μНΥ |
| TURN RATIO'S: SEC (8,7-6,5): PRIMARY (4-3) BIAS (2-1): PRIMARY (4-3) | | 1: 8.375 1: 8.375 | | ± 4% ± 4% |
| PRI LEAKAGE IND. (SEC SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ | | | 36.0 | μНΥ |
| 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 0.0 | 12.0 0.20 0.20 50.0 | 265 1.70 2.00 | Vac Vdc Amps Amps ±% ±% ±mV |

FIGURE 1: SCHEMATIC DIAGRAM

WHITE DOT ON TOP OF BOBBIN DENOTES PIN #1



SECONDARY PINS #8 & 7, #6 & 5 MUST BE RESPECTIVELY CONNECTED TOGETHER FOR PROPER OPERATION. I.E. CONNECTED AS ONE PARALLEL WINDING.

NOTE1:

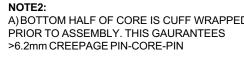
REINFORCED INSULATION SYSTEM, UL1950, IEC950, CSA-950: A) ALL MATERIALS MEET "UL", "CSA" & "IEC" REQUIREMENTS

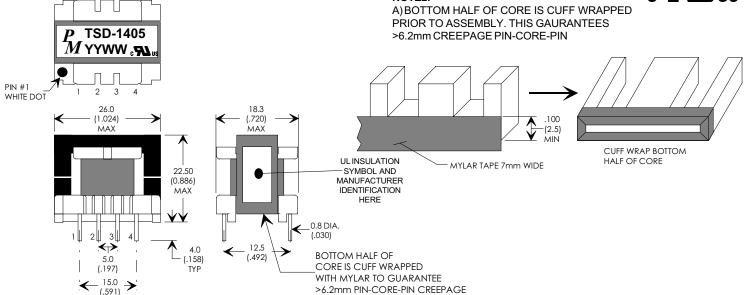
- B) TRIPLE BASIC INSULATED SECONDARY.
- C) DESIGNED TO MEET ≥6.2mm CREEPAGE REQUIREMENTS.
- D) VARNISH FINISHED ASSEMBLY.
- E) UL1950 & CSA-950 CERTIFIED: FILE #E162344. F) UL CLASS (B) 130 INSULATION SYSTEM PM130-R1,
- PM130-H1, PM130-H1A (UL FILE #E177139) OR ANY UL AUTHORIZED CLASS (B) INSULATION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

(1) REFER TO RD5 APPLICATION CIRCUIT OF FIGURE 3.

7 6

FIGURE 2: PHYSICAL DIMENSIONS mm (INCHES)





| REV. | DESCRIPTION OF CHANGES | BY |
|----------|--|----|
| 03/31/99 | ORIGINAL RELEASE | PP |
| 09/30/99 | UPDATE TO UL CLASS (B) 130 INSULATION SYSTEM | MD |
| 01/12/00 | UPDATE TO UL RECOGNIZED FILE #E162344 | MD |
| | | |
| | | |
| | | |

, FEE25, EE2425), 8-PIN VERTICAL BOBBIN



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM DIMENSIONAL TOLERANCES ARE: DECIMALS. ANGLES

.X ± .25 .XX ± .15 ±0 ° 30' DO NOT SCALE DRAWING

| FLYBACK TRANSFORMER CONTROL DRAWING | | | | | |
|-------------------------------------|--------------------|--|--|--|--|
| PREMIER P/N: TSD-1405 | REVISION: 01/12/00 | | | | |
| ENGR: PETER PHAM | REF: TOP224P | | | | |
| SCALE: NONE | SHEET: 1 OF 6 | | | | |

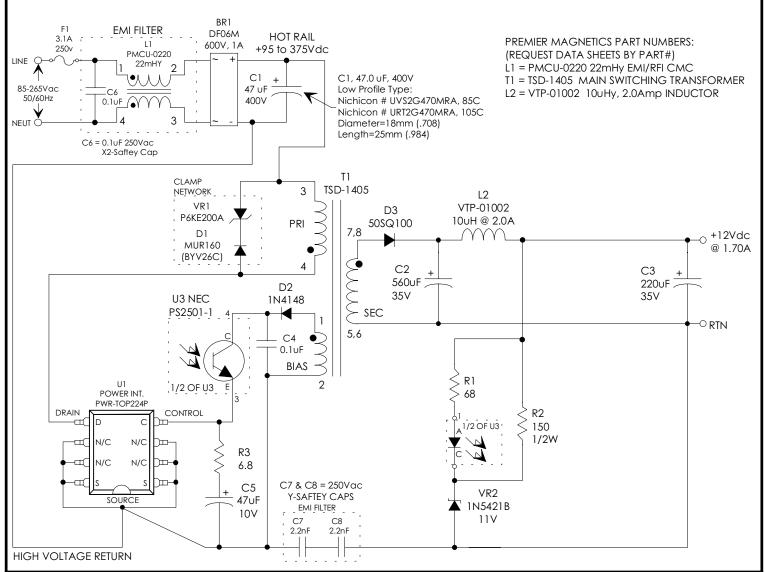
APPLICATION NOTES

Premier Magnetics' TSD-1405 Switch Mode Transformer was designed for use with Power Integrations, Inc. PWR-TOP224P 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%. Premiers' TSD-1405 transformer has been optimized to provide maximum power throughput.

The TOPSwitch-II 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 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 20 watt application circuit utilizing Power Integrations TOP224 switching regulator in the flyback buck-boost configuration. The component values listed are intended for reference purposes only. Please refer to Power Integrations application notes for the RD5 demo board for more information.

FIGURE 3: TYPICAL APPLICATION CIRCUIT





UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM DIMENSIONAL TOLERANCES ARE: DECIMALS ANGLES .X ± .25 ±0 ° 30' .XX ± .15

DO NOT SCALE DRAWING

| 1212/OK TRUNG GRAZE GOTTING DIG WING | | | | |
|--------------------------------------|--------------------|--|--|--|
| PREMIER P/N: TSD-1405 | REVISION: 01/12/00 | | | |
| ENGR: PETER PHAM | REF: TOP224P | | | |
| SCALE: NONE | SHEET: 2 OF 6 | | | |

FLYBACK TRANSFORMER CONTROL DRAWING