TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C
SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS PWR-TOP200YAI. REFER TO APPLICATION CIRCUIT OF FIGURE 3.

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SPEC LIMITS</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY INDUCTANCE (2-1)</td>
<td>1.35</td>
<td>1.50</td>
</tr>
<tr>
<td>VOLTAGE = 0.250Vrms</td>
<td>FREQUENCY = 100 KHz</td>
<td></td>
</tr>
<tr>
<td>TURN RATIO'S:</td>
<td>SECONDARY (8-5): PRIMARY (2-1)</td>
<td>1: 22.00</td>
</tr>
<tr>
<td>BIAS (3-4): PRIMARY (2-1)</td>
<td>1: 7.33</td>
<td>1 ± 3%</td>
</tr>
<tr>
<td>PRI LEAKAGE IND. (8-5 SHORTED)</td>
<td>Voltage = 0.250Vrms</td>
<td>FREQUENCY = 100 KHz</td>
</tr>
</tbody>
</table>

HIPOT: | PRIMARY TO SECONDARY | 3000 | ——— | ——— | Vrms |
| BIAS TO SECONDARY | 3000 | ——— | ——— | Vrms |

APP CIRCUIT PARAMETERS: (1) | AC LINE VOLTAGE 47/400 Hz | 85 | ——— | 265 | Vac |
| OUTPUT VOLTAGE | 5.0 | ——— | 1200 | Vdc |
| OUTPUT CURRENT CONTINUOUS | 100.0 | ——— | 1400 | mA |
| OUTPUT CURRENT PEAK | ——— | ——— | ——— | mA |
| LINE REGULATION 85 TO 265Vac | 0.50 | ——— | ——— | ±% |
| LOAD REGULATION 10-100% | 1.00 | ——— | ——— | ±% |
| RIPPLE | 50.0 | ——— | ——— | ±mV |

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.
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 3.
APPLICATION NOTES

Premier Magnetics' POL-05012 Switch Mode Transformer was designed for use with Power Integrations, Inc. PWR-TOP200YAI 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' POL-05012 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, 6 watt application circuit utilizing Power Integrations PWR-TOP200 switching regulator in the flyback buck-boost configuration. The component values listed are intended for reference purposes only. This circuit provides +5Vdc at 1.20Amp continuous and is capable of >1.40Amps peak for short periods of time. The voltage feedback loop is closed to the +5V output via the opto coupler thus providing a high precision 5V output. If line and load regulation of 8-10% can be tolerated please refer to Premier's POL-05010 data sheet for a simpler circuit implementation.

FIGURE 3: TYPICAL APPLICATION CIRCUIT

ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:

+5V OUTPUT: C2 ≥16V, Ripple Rated ≥ 1300mA @ 100KHz @ Max. Op. Temp.
PANASONIC FA SERIES: LOW IMPEDANCE LONG LIFE RADIAL SERIES
C2 = 330uF, 35V = PANASONIC EEUFA1E331
C3 = 220uF, 35V = PANASONIC EEUFA1E221

U1 POWER INT. PWR-TOP200YAI
DRAIN SOURCE
PROPERLY SIZED HEAT SINK REQUIRED
HIGH VOLTAGE RETURN
C7 & C8 = 250Vac Y-SAFETY CAPS
EMI FILTER
C7 = 2.2nF
C8 = 2.2nF

D2 1N4148
C4 0.1uF
 bias

C5 47uF
R1 6.2

C1 22.0 uF, 400V
Low Profile Type:
Nichicon # UV32G220MRA, 85C
Nichicon # URT2G220MRA, 105C
Diameter=18mm (.708)
Length=20mm (.788)

L1 = PMCU-0330 33mHy EMI/RFI CMC
T1 = POL-05012 MAIN SWITCHING TRANSFORMER
L2 = VTP-01001 10uHy, 1.0Amp INDUCTOR

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MM
DIMENSIONAL TOLERANCES ARE:
DECIMALS ± .15
ANGLES ± 30°