



Specs:

- 1) Output Power = $(20V \cdot 2.25A) + (15V \cdot 3.33A) + (5V \cdot 3A) = 65W$
- 2) Input Power = $65W / 0.8 = 81.25W$
- 3) $239mA = (81.25W / 340V) < \text{Input Current} < (81.25W / 127V) = 639mA$
- 4) Peak Current = $(5.5 \cdot 65W) / 127V = 2.815A$

Transformer:

- 1) $L_{pri} = (127V \cdot 5) / (2.815A \cdot 50KHz) = 451\mu H$
- 2) $L_{gap} = (.4 \cdot \pi \cdot .000451 \cdot 10^8) / (.904 \cdot 2000^2) = .044cm = 17mils$
- 3) Core: Magnetics, Inc. 0P43007EC (gapped with tape)
- 4) $N_{pri} = 1000 \cdot (.451mH / 100mH)^{.5} \approx 67T$
 $N_{bias} = 67 \cdot 12 / 127 \approx 7T$
 $N_{5V} = 67 \cdot 5 / 127 \approx 3T$
 $N_{15V} = 67 \cdot 15 / 127 \approx 8T$
 $N_{20V} = 67 \cdot 20 / 127 \approx 11T$
- 5) Measured $L_{pri} = 467\mu H$
- 6) Measured $L_{leak} = 26\mu H$

| | | |
|-----------------------|--------------------------|--------------|
| Title | | |
| Prototype VII - Power | | |
| Size | Document Number | Rev |
| A3 | 110 | A |
| Date: | Friday, January 22, 2010 | Sheet 1 of 1 |