3 Schematic

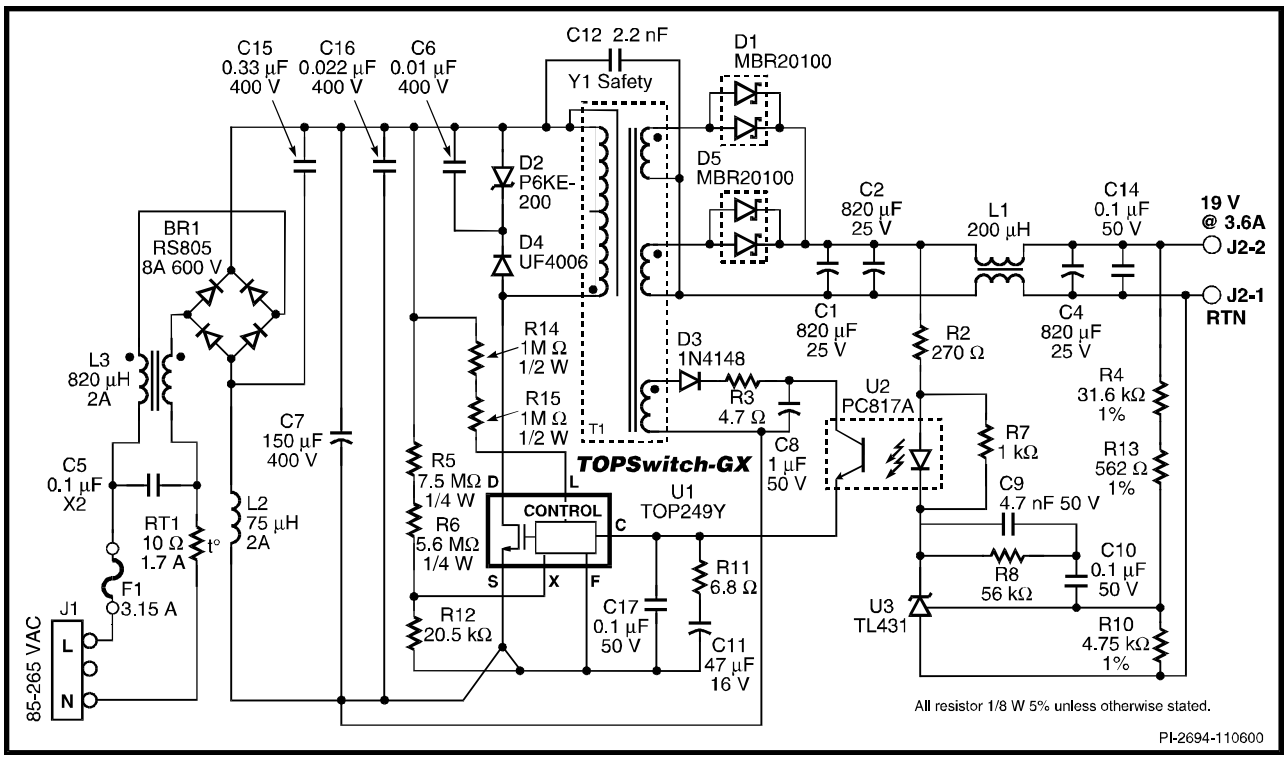

Figure 3 - 70W TOP249Y Power Supply Schematic

3.1 Description

The EP11 is a low-cost flyback switching power supply using the TOP249Y integrated circuit from the *TOPSwitch-GX* family. The circuit shown in Figure 3 details a 19 V, 70 W supply that operates from an input range of 85 to 265 V_{AC}, suitable for applications requiring either an open frame supply or an enclosed adapter.

AC power is rectified and filtered by BR1 and C7 to create the high voltage DC bus applied to the primary winding of transformer (T1). Only a 150µF capacitor is required (2.1 µF/W) due to the wider DC_{MAX} of *TOPSwitch-GX* and the line feed forward function provided by the LINE SENSE Pin. The other side of the primary is driven by the integrated high-voltage MOSFET within the TOP249Y. Diodes, D4 and D2 clamp the DRAIN voltage spike caused by transformer leakage inductance to a safe value below the 700 V maximum. Capacitor C6 is added in parallel with D2 to reduce zener clamp dissipation.

The *TOPSwitch-GX* family provides new operating features and extended specifications. The EP11 power supply is designed using several of these features. Resistors R14 and R15 connected to the LINE SENSE pin (L) of *TOPSwitch-GX* (U1) are used to implement