

Figure 24. Schematic from DER-548 a 20 W, 120 V-170 mA Non-isolated LED Driver for Tube with High-line Input Range of 190 – 300 VAC using LYTSwitch-1.

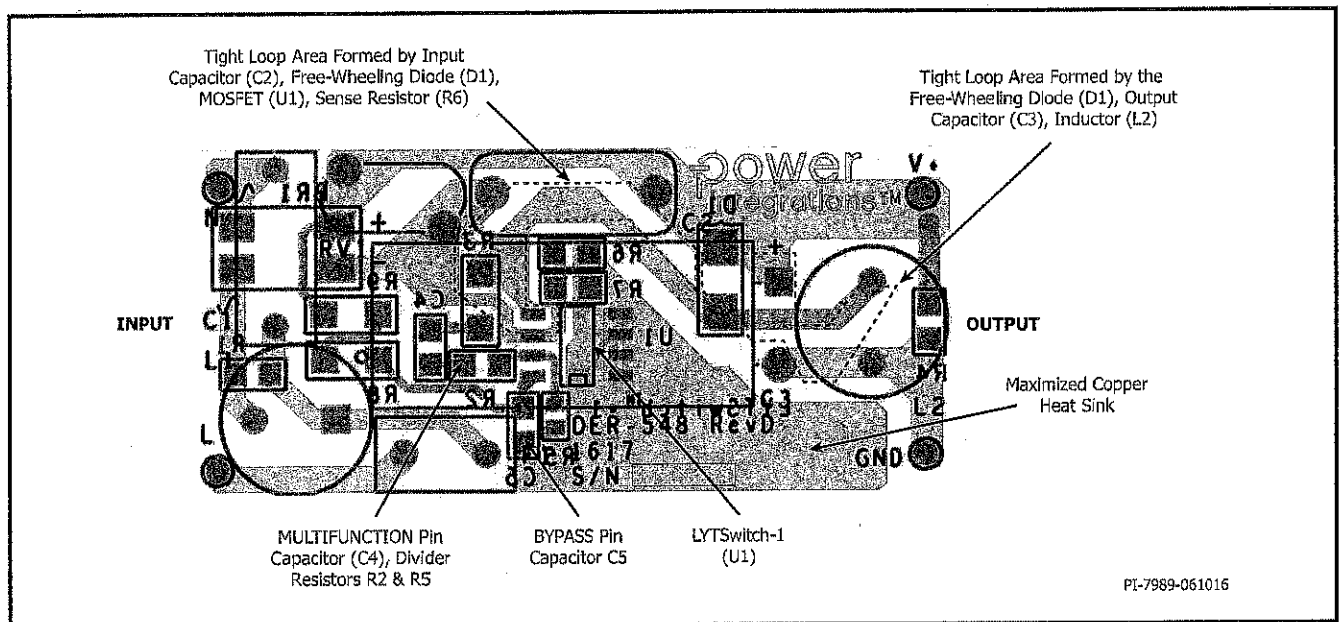


Figure 25. Design Example DER-548 PCB Layout Showing the Critical Components and Loop Areas with LYTSwitch-1 in Low-Side Buck Configuration.

Since the switch MOSFET is referenced to ground, the low-side buck configuration would also give an advantage of using a low-cost off-the-shelf dog bone type inductor as demonstrated in the design example DER-548. The addition of a small capacitor C4 (Figure 24) is needed to couple the high-voltage referenced signal of the output voltage into the MULTIFUNCTION pin of the IC through the resistor

divider network R2, R3 and R5. Based on the simulation and bench results capacitance of 100 pF is a good compromise between AC line rejection and flatness of the output voltage during the off-time of the switch. Based on capacitance tolerance, 68 pF to 150 pF range can be used.