

Soldering Leads to the Lamps

To make sure that your LVPS is working as it should, use the 1157 lamp (used as a rear brake light in a car) from the plastic bag labeled *LVPS Test Kit* as a load on the LVPS. This lamp has two filaments (tail and stop light) with nominal ratings of 8 watts and 27 watts respectively at an applied voltage of 12 V.

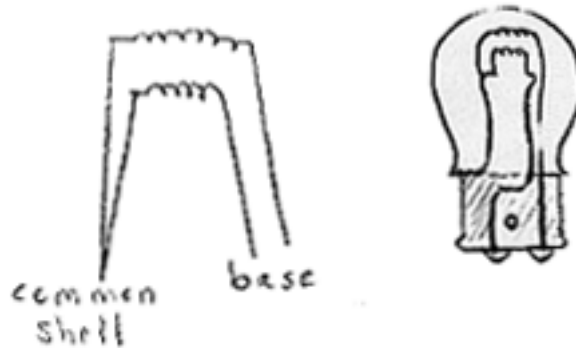


Figure 15: 1157 lamp

Turn down the voltage and disconnect the wall transformer, removing power from the LVPS. Hook up the 1157 bulb to the output of the LVPS power supply. To do this, solder 3 short pieces of solid wire to the bulb terminals, one to the brass base, and one to each contact on the base. One lead to each filament is connected to the brass shell it is "common" to both of them. The other lead is connected to one of the two terminals (soldered bumps) on the base of the lamp.

Identify the 8 W filament (cold resistance about $2\ \Omega$), either with your MMM on the RX1 range or by lighting it with the LVPS---it's the upper filament in the lamp. **Measure the resistance of one filament (i.e. between the brass base and one contact) and then repeat for the other filament.** Use your clip leads to connect the LVPS output across the filament with the higher resistance. Turn up the voltage briefly to 12 V (*and no more*). Now try the other filament at this voltage, briefly. If this were to be the tail light for a car, which filament do you think is the brake light? In fact the resistances increase when the filaments are hot so the dissipations are less. [Do *NOT* burn out the bulb. Leave the leads on it.]