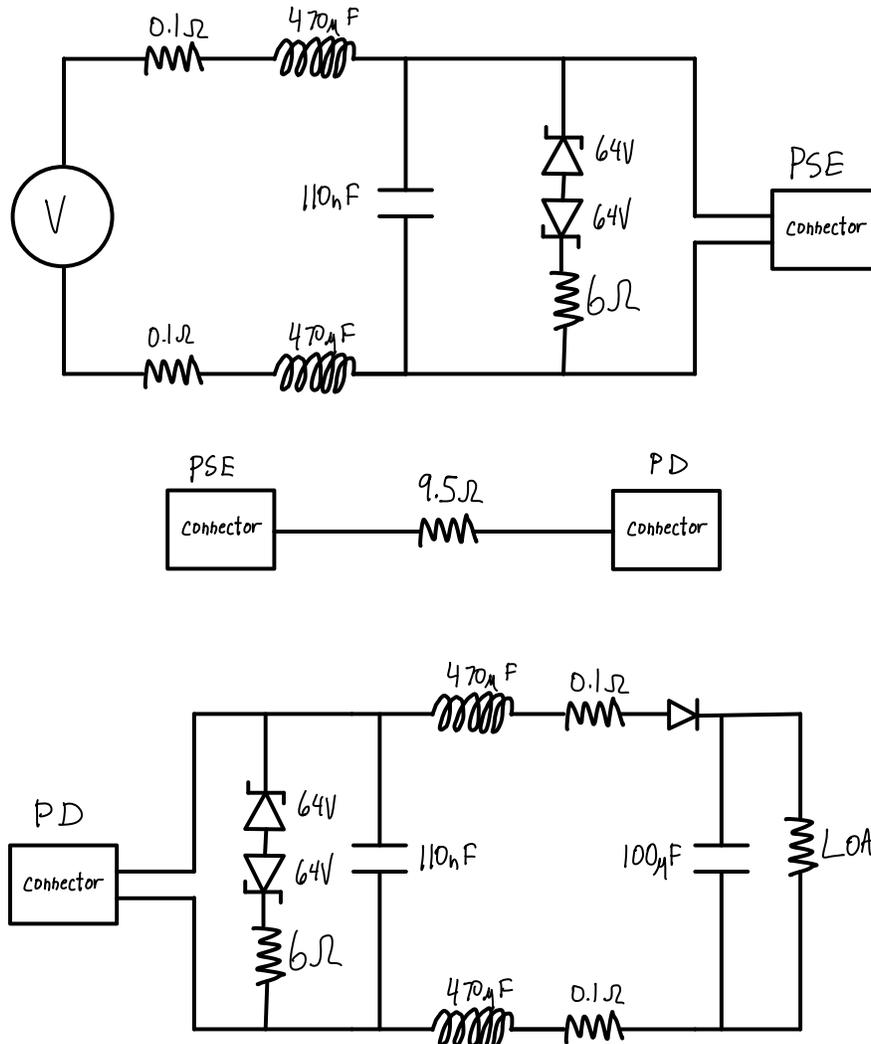


The goal of the test circuits is to generate a voltage and current that matches the maximum allowed by the 802.3 standard with worst case expected circuit elements. To meet this goal, the system would have 50V and 1.579A at the PSE connector and 35V (and of course 1.579A) at the PD connector. Discussions of each element follows the circuits.

Test Circuit Diagrams for PoDL unmating under load:



Discussion of the elements:

The power supply: voltage is not stated for the power supply as it will depend on the choices made for the circuit elements. It is expected to be something like 52V to generate 50V at 1.579A at the PSE output connector. The test circuit will need an adjustable supply.

The inductors: for the test, it is recommended to choose a large inductor that has low DCR (TRUE, should we recommend something closer to what's in a PSE or PD? [Look at MSS1812T-474 for example of possible inductor](#))

The TVS protection diodes: actual systems will typically use smaller parts like the SMAJ64A or SMBJ64A. Since we expect that the tester will run MANY cycles, we recommend using an SMDJ64A to prevent premature failure. In an attempt to match the performance of the smaller

SMA or SMB parts, we've added an inline resistor in the range of 6 ohms. A standard value close to that is acceptable.

The cable resistance: a 9.5ohm, 24W resistor is required to simulate the worst case cable loss.

The PD load: This can be implemented with power resistors, but is better achieved by PODL test circuit a programmable load. This load has to dissipate as much as 55W, but the power dissipated in the PD coupling inductors and series resistors would need subtracted. A

programmable load in combination with a variable DC supply for the PSE will allow dialing in the proper source voltage and PD load to achieve the 50V, 1.579A target at the PSE and the 35V target at the PD.

Incidentally, it seems the test would really focus on the disconnect at the PSE due to the higher voltage. If testing at the PD connector is not required, a fixed PD load resistance can be chosen to allow removal of the cable resistance while still generating 50V at 1.579A at the PSE connector.