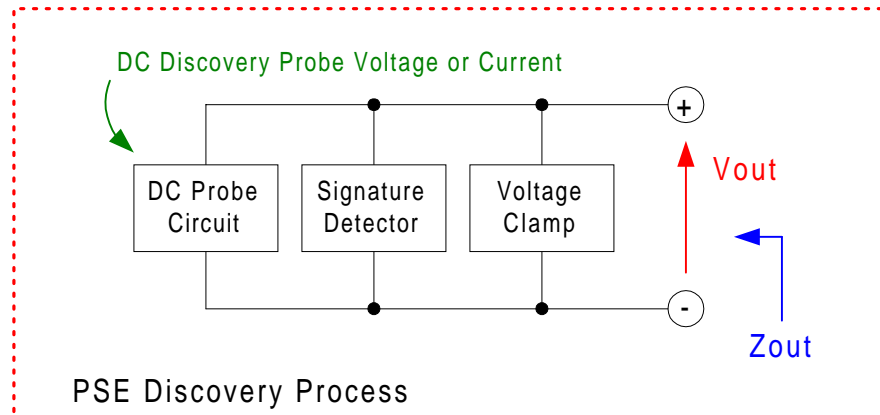# PSE Discovery Basic Specifications:

1.1.   PSE connected to valid PD signature:

1.1.1. Discovery Probe Voltage Range:
        2.8 VDC to 10 VDC   *the discovery process must be within this range with valid signature*

1.1.2. Discovery Probe Current Range:
        100 μA to 1 mA (10 ma maybe?)   *the PSE discovery process must probe within this range of currents*

1.1.3. Output Impedance (Zout) anywhere within the Discovery Probe Voltage Range:
        70 Kohm <u>minimum</u> output impedance below 100 Hz
             in parallel with
        150nF maximum output capacitance

1.1.4. Detection Method during discovery:
        Multi-point, or multi-range detection method is valid within the Discovery Probe Voltage Range.
        The method used must probe a span of at least 2 volts across the PD
        A single point detection method is <u>not</u> valid

1.2.   PSE connected to an open circuit:

1.2.1. Open Circuit Voltage Clamp:
        The open circuit voltage at Vout must be within the following range:
        11 VDC to 13 VDC
        …*should this range be increased up to 28V???*

1.3.   PSE connected to an short circuit:

1.3.1. Short Circuit Current:
        The short circuit current must not exceed a magnitude of:
        10 ma, maximum

1.4. PSE output driven externally with a negative polarity

Note that the expected clamp behavior is that of a diode which is forward biased under these conditions

1.4.1. Reverse Voltage Clamp at Vout:

-0.1 VDC minimum at 10 mA   *Note that a diode would satisfy these requirements*
-1.5 VDC maximum at 10 mA

1.4.2. Output Impedance (Zout)

1 Kohm maximum output resistance   *Note that a diode would satisfy this requirement*
    in parallel with
150nF maximum output capacitance

1.5. PSE is not powered

Note that the expected clamp behavior is that of a diode

1.5.1. PSE driven externally with a positive polarity within the Discovery Probe Voltage Range:

Output Impedance: same specifications as in part 1.1.3, above

1.5.2. PSE driven externally with a positive polarity voltage between 10 VDC and 60 VDC, or a telephony voltage as described in IEEE std 802.3 section 14.7.2.4:

No damage is done to PSE

1.5.3. PSE driven externally with a negative polarity:

Same specifications as in part 1.3, above   *Note that a diode would satisfy this requirement*

1.6. PSE is powered up, but mis-wired into some source of power

1.6.1. PSE driven externally with a positive polarity voltage between 10 VDC and 60 VDC, or a Telephony voltage as described in IEEE std 802.3 section 14.7.2.4:

- No damage is done to PSE
- The discovery process is not successful

1.7. Signature Detection Ranges

1.7.1. Must detect range

PD signature resistances between 19K and 26.5K (??) ohms in parallel with 0 to 600 nF (??)
Signature may be in series with 0, 1, or 2 diodes

1.7.2. Must not detect range

PD signature resistances less than 15K or greater than 33K ohms in parallel with 0 to 600 nF
Signature may be in series with 0, 1, or 2 diodes

Do we need a must not detect cap loads above XX uF???