We claim:

1. An electronics (100) configured to determine an input voltage to a galvanic isolation point of the electronics (100), the electronics (100) comprising:

an isolation transformer (120) configured to:

conduct a primary current (Ip) provided by an input voltage source (110); and

provide a secondary voltage (Vs), the secondary voltage (Vs) being proportional to a primary voltage (Vp) induced by the primary current (Ip); and

a peak detection circuit (130) coupled to the isolation transformer (120), the peak detection circuit (130) being configured to receive the secondary voltage (Vs) at a first secondary terminal end of a secondary winding connected to a first terminal of a load (L) and a second secondary terminal end of the secondary winding connected to a second terminal of the load (L), and,

based on the secondary voltage (Vs), provide a signal that is proportional to the primary voltage (Vp) due to the peak detection circuit (130) holding the secondary voltage (Vs).

2. The electronics (100) of claim 1, further comprising a rectifier circuit (140) coupled to the isolation transformer (120), the rectifier circuit (140) being configured to receive the secondary voltage (Vs) and provide to ~~a~~ the load (L):

a capacitor voltage when the secondary voltage (Vs) is at a negative value; and

the secondary voltage (Vs) when the secondary voltage (Vs) is a positive value.

3. The electronics (100) of claim 2, wherein the rectifier circuit (140) is comprised of:

a rectifier diode (D1) in a series electrical connection with the isolation transformer (120) and configured to provide the secondary voltage (Vs) to the load (L) when the secondary voltage (Vs) is the positive value by

conducting a secondary current (Is) provided by the isolation transformer (120); and

an output capacitor (Cout) in a parallel electrical connection with the isolation transformer (120), the output capacitor (Cout) being configured to receive the secondary voltage (Vs) when the rectifier diode (D1) is conducting the secondary current (Is).

4. The electronics (100) of claim 3, wherein the rectifier diode (D1) is further configured to prevent a current flow when the secondary voltage (Vs) is at the negative value.

5. The electronics (100) of one of any of the foregoing claims 1 through 4, wherein the peak detection circuit (130) is further configured to hold a first voltage value of the secondary voltage (Vs) when the secondary voltage (Vs) is at a second voltage value that is greater than the first voltage value.

6. The electronics (100) of claim 5, wherein the peak detection circuit (130) is comprised of a peak detect diode (D2) in a series electrical connection with a peak hold capacitor (C1), the peak detection circuit (130) being in a parallel electrical connection with the isolation transformer (120).

7. The electronics (100) of claim 6, wherein:

the peak hold capacitor (C1) is configured to hold the first voltage value of the secondary voltage (Vs) when the secondary voltage (Vs) is at the second voltage value that is greater than the first voltage value; and

the peak detect diode (D2) is configured to conduct a current when the second voltage value of the secondary voltage (Vs) is less than the first voltage value.

8. The electronics (100) of one of any of the foregoing claims 1 through 7, wherein the secondary voltage (Vs) is proportional to the primary voltage (Vp) by a secondary-to-primary turns ratio (Ns/Np) of the isolation transformer (120).

9. A method for determining an input voltage to a galvanic isolation point, the method comprising:

conducting a primary current provided by an input voltage source through an isolation transformer;

providing a secondary voltage with the isolation transformer, the secondary voltage being proportional to a primary voltage induced by the primary current;

receiving the secondary voltage with a peak detection circuit at a first secondary terminal end of a secondary winding connected to a first terminal of a load and a second secondary terminal end of the secondary winding connected to a second terminal of the load; and

based on the secondary voltage, providing with the peak detection circuit a signal that is proportional to the primary voltage due to the peak detection circuit holding the secondary voltage.

10. The method of claim 9, further comprising receiving with a rectifier circuit the secondary voltage and providing to a load with ~~a~~ the rectifier circuit:

a capacitor voltage when the secondary voltage is a negative value; and

the secondary voltage when the secondary voltage is a positive value.

11. The method of claim 10, wherein providing to the load with the rectifier circuit the capacitor voltage when the secondary voltage is the positive value comprises:

providing with a rectifier diode in the rectifier circuit in a series electrical connection with the isolation transformer by conducting a secondary current provided by the isolation transformer; and

receiving with an output capacitor in a parallel electrical connection with the isolation transformer the secondary voltage when the rectifier diode is conducting the secondary current.

12. The method of claim 11, further comprising preventing current flow with the rectifier diode when the secondary voltage is at the negative value.

13. The method of one of any of the foregoing claims 9 through 12, further comprising holding with the peak detection circuit a first voltage value of the secondary voltage when the secondary voltage is at a second voltage value that is greater than the first voltage value.

14. The method of one of any of the foregoing claims 9 through 13, further comprising providing a peak detect diode and a peak hold capacitor, and connecting the peak detect diode and the peak hold capacitor in series to comprise the peak detection circuit.

15. The method of claim 14, further comprising holding with the peak hold capacitor the first voltage value when the secondary voltage is at the second voltage value greater than the first voltage value and configuring the peak detect diode to conduct current when the second voltage value is less than the first voltage value.

16. The method of claim 15, wherein the secondary voltage is proportional to the primary voltage by a secondary-to-primary turns ratio of the isolation transformer.