

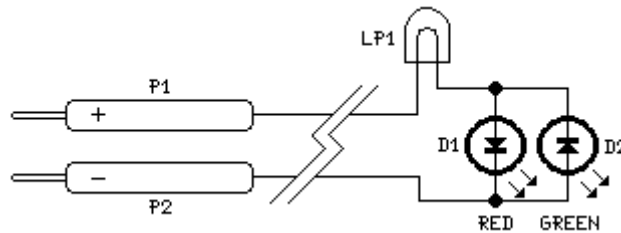
# Ultra-simple Voltage Probe

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**Detects 1.8 to 220 Volts DC or AC**  
**Minimum parts counting**

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## Circuit diagram:



## Parts:

D1 \_\_\_\_\_ 5 or 3mm. Red LED  
D2 \_\_\_\_\_ 5 or 3mm. Green or Yellow LED  
LP1 \_\_\_\_\_ 220V 6W Filament Lamp  
P1 \_\_\_\_\_ Red Probe  
P2 \_\_\_\_\_ Black Probe

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## Device purpose:

This circuit is not a novelty, but it proved so useful, simple and cheap that it's worth building. When the positive (Red) probe is connected to a DC positive voltage and the Black probe to the negative, the Red LED illuminates. Reversing polarities the Green LED illuminates. Connecting the probes to an AC source both LEDs go on. The lamp limits the LEDs current to 40mA @ 220V AC and its filament starts illuminating from approx. 30V, shining more brightly as voltage increases. Therefore, due to the lamp's filament behaviour, any voltage in the 1.8 to 220 Volts range can be detected without changing component values.

**Note:** A two colors LED (Red and Green) can be used in place of D1 & D2.

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