

HV350REG/SAFE

Further Information

REDUCED SHOCK "SAFE MODE" of OPERATION

Generates 5-35kV of high voltage with a minimal shock hazard. A "shockless" lead is provided, containing a high megaohm, high volt resistor that limits current to less than 200ua. This lead then attaches to the normal HV output and limits the high peak power pulse that initially is present on the capacitive output of the multiplier stack, which can be painful if contacted accidentally. Can be used to produce ions, cold plasma and coronas without using external capacitors.

*THIS SAFE MODE CAN BE USED FOR TESTING LOW CAPACITY HIGH VOLTAGE CAPACITORS
IN THE RANGE OF 100 TO 5,000 PFD*

Note: Charging external capacitors can produce a shock even in this reduced output "safe mode".

This excellent circuit can be utilized as both a current source and a voltage source. It is very useful for charging small energy high-voltage capacitors such as ceramic discs, doorknob capacitors and device types within the ranges of picofarads to a maximum of .005 μF . The voltage ranges can be 5000 up to almost 40,000. A capacitor such as a .005u at 40,000 V will take approximately 1 to 2 sec to charge. We don't recommend going any higher in capacity than .05 μF as this would be 40 joules and can be lethal under the right circumstances.

You can use your own ingenuity in making a test stand to check the integrity of capacitors that you intend to use in a voltage multiplier or similar circuit. We use two parallel pieces of aluminum with little notches cut and these are mounted on insulating pillars and the capacitors to test is spread eagled between the two of them and then tested. You can use this type of jig to do multiple capacitors and allow them to stay on for a considerable amount of time to see if the capacitors will hold up to the specs that you require. But remember when those capacitors are connected in parallel the energy goes up as by the amount of each capacitor added so it doesn't take much to get up to a dangerous value of energy storage.

HIGH VOLTAGE INTEGRITY TESTER.

This device not only charges high-voltage low capacitance values often found in ceramics, door knobs and other high-voltage low capacity pieces, but is also excellent for HI POT testing or as a testing system to verify standoff voltage ratings of insulators, dielectrics, etc. Such types of capacitors are often used in multipliers or systems that may be potted, so verifying these capacitors prevents costly repairs should one fail.

NOTE:

Low-current high-voltage power supplies that supply under 5mA of continuous current can give a mild shock once the capacitance of the system is discharged. Unfortunately, this capacitance is required in most high-voltage systems and acts as energy storage where contact now requires discharging the system capacitance which can give a mild to painful shock due to the initial high peak discharge current. Even on the shockless unit, a wire lead of sufficient length will add enough capacitance so that initial contact you will feel a slight tingle electrical shock, but it will not be as noticeable as a shock from the larger capacitance in the normal mode of operation for the power supply.