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Subject: Test Points

Posted by [Manualblock](#) on Sun, 23 Jan 2005 02:10:15 GMT

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T, is it possible you have voltage test points and approximate readings available for this circuit?

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Subject: Sure...

Posted by [PakProtector](#) on Sun, 23 Jan 2005 02:26:12 GMT

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hey-hey!!!,What do you want to know? Keep in mind, these will be semi-experiential gusses, and should be taken as such. +/-15% is about what I expect to be able to hit, with exceptions of B+, cathode voltage. Plate voltage will be dependant on your exact 5687 performance and where exactly you set the active load's current level.I don't have one of these things in front of me to measure and report on.regards,Douglas

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Subject: Re: Test Points

Posted by [Damir](#) on Sun, 23 Jan 2005 08:00:27 GMT

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B+ is about 200V, anode voltage (between anode and ground) is about 110 V, cathode voltage (voltage drop through 2 red LED, between the cathode and ground) about 3,5V. Most of the voltage drop from B+=200V to the Ua=110V is through the upper mosfet, lower would drop maybe Uds~1,5V or so. Upper mosfet must be mounted on the small heatsink. Use termal-conductive insulation.Voltage through "current set" resistor (~100 Ohms in the schematics, use trim-pot of 500 Ohms - 1k, from the most resistance to the lower resistance) by Ohms Law is  $U=R*I$ . Be carefull, high voltages are dangerous. PS cap can be charged for a long time after switching off, use resistive bleeder. Last time I forgot this (270uF charged at 430V, nice electro-shock)...

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Subject: Bleeder...

Posted by [PakProtector](#) on Sun, 23 Jan 2005 11:22:10 GMT

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Hey-Hey!!!,A resistor of ~40k across the main filter cap will bleed the voltage fairly quickly. measure twice, touch once. Low impedance inductive/capacitive backed energy storage devices are nothing to be taken lightly.the bleed resistor is big enough to have an efect on the output voltage of the L-C filter too, which is a nice side benefit.For setting the CCS, two 9V batteries is

more than enough voltage to regulate properly. One will probably be enough, but two is more certain IMO. Set with either the direct mA meter, or by Ohm's Law and a 10R resistor.regards,Douglas

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Subject: Re: Test Points

Posted by [PakProtector](#) on Mon, 24 Jan 2005 01:21:57 GMT

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Hey-Hey!!!,Damir has got the anticipated voltages pretty close. Go to the Duncan amps TDSL and get the data sheet for the 5687( probably have to get the 'WA' version, it's the same ).Block off the curves past ~200 volts. Draw a horizontal line at ~10 mA. Interpolate a bit to generate a grid curve at ~3.7 volts. What plate voltage do the load and grid lines cross? By the curves in my sheet, it looks like ~90V. Perhaps a third LED to raise the plate voltage to ~120 might be a good idea...try both and see. You can clip lead a short of one of the LED's if you want to put in three the first time.regards,Douglas

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Subject: Voltage?

Posted by [colinhester](#) on Tue, 25 Jan 2005 17:15:09 GMT

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T, What voltage rating for the bleeder resistor? Would this resistor require a heat sink?I would like to thank you for all you help in guiding us through this project. Your willingness to step up and take charge has been nothing short of amazing. I don't think we can ever thank you enough for your help and insight. What is your last name? I would like to mention it when I write Heybore tomorrow.....Thanks again, Colin

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Subject: Voltage?

Posted by [PakProtector](#) on Tue, 25 Jan 2005 19:29:33 GMT

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Hey-Hey!!!,Since this resistor is across the entire B+, it should be able to stand worst-case. Say 500V will be plenty. As to power,  $V^2$  over R will give you power. Using 200V for the V-term will give you a value to double. We don't want the thing getting too hot. 200 squared is ~40k so about a watt is reasonable estimate of actual heat. A 5W ought to be easy enough to source.regards,Douglas Piccard

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