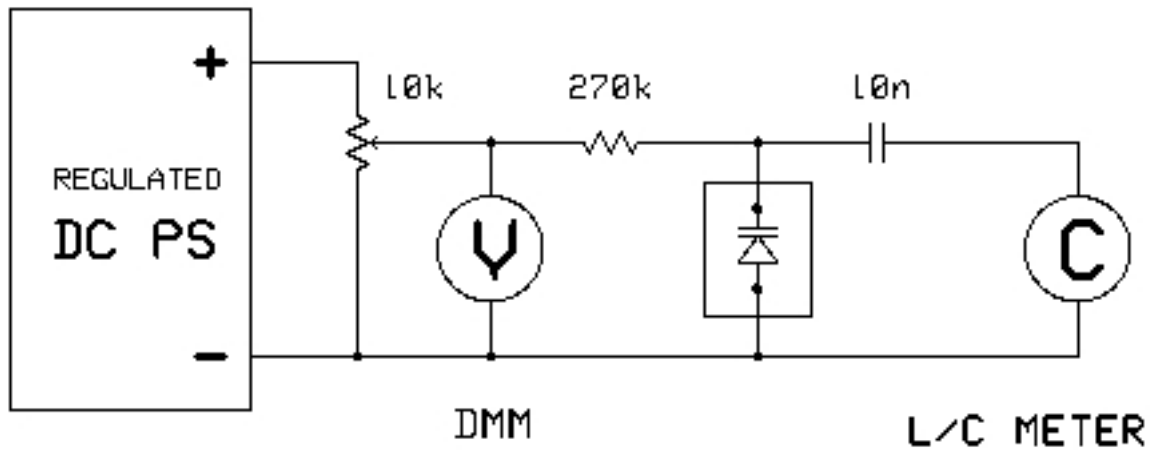


VK6JY varactor experiments

Written by Hans Summers

Tuesday, 01 September 2009 04:09 - Last Updated Tuesday, 01 September 2009 04:15



John VK6JY sends some results from Albany, Western Australia, obtained using the circuit shown here (right). The C-meter is an [AADE L/C meter](#) and the PSU is a 15V 20A DSE 3800 (overkill? What! Never).

Comments and photos from John

Left: John's test board setup

Middle: Green LED. Red line = forward bias. Blue line = reverse bias. Reverse bias above shows about 10 to 32 pF range and accepted as better than usual for a small green LED. Forward bias showed surprising degree of linearity from 4 to 15 volts and a kink below 4.

Right: Red LED. Reverse bias gave alarmingly low pF from 2 to 5 only. Maybe it is a high-bright sample - yet to be tested. Forward bias again like the smaller green but not so generous on the pF and faint light was being emitted from about 3 volts on. This is probably the reason for kinky area in both LEDs under 5 volts.

{gallery}varicapjy/results{/gallery}

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NOTE: When the diode is in forward bias, current will start to flow and therefore the actual voltage across the LED will not be that indicated by the DMM. It could be argued that doesn't actually matter much anyway, as the result of good linearity vs applied voltage is the same regardless. However it seems that Q will degrade very significantly when the diode is forward biased, though the quantitative extent of this degradation hasn't been measured.