

6088 submini-tube VFO

Written by Hans Summers

Tuesday, 22 May 2012 22:58 - Last Updated Wednesday, 23 May 2012 14:18

The 6088 submini tube has a 1.25V 20mA filament (25mW) and pentode mode $g_m=650\mu S$ while triode mode $g_m=860\mu S$. One reader very kindly sent me two of these nice tubes, CK6088 by Raytheon, to experiment with!

The 6088 seems from the datasheet to be more suitable for an HF oscillator than the CK512 tried previously (higher gain). I tried [Andy G4OEP's XFY43 circuit](#) which at first did not work. With a higher supply voltage of 54V the circuit sprung to life, producing 4V peak-peak output. So at long last, success building an oscillator with a submini-tube! The oscillator stopped oscillating below 34V supply voltage.

{gallery}tubevfo/6/1{/gallery}

I did some further optimisation empirically, to improve the performance of this oscillator. I was able to get it to oscillate down to 27V supply but no lower. The process of optimisation was largely a matter of trial and error - using two variable resistors and three variable capacitors, and observing the effects of changing everything. This photo (CLICK for bigger version) shows how things look during optimisation!

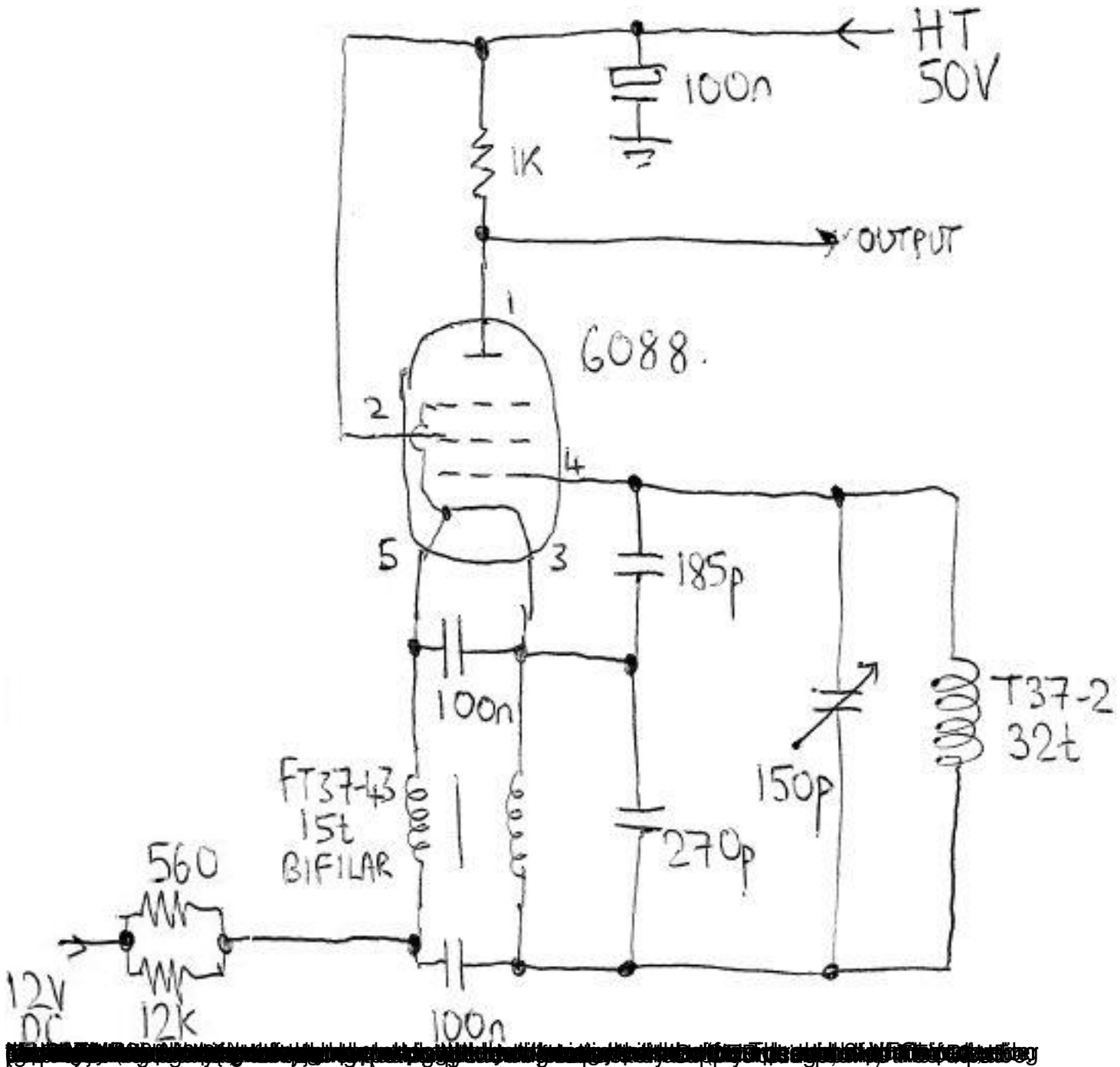
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The final circuit diagram is:

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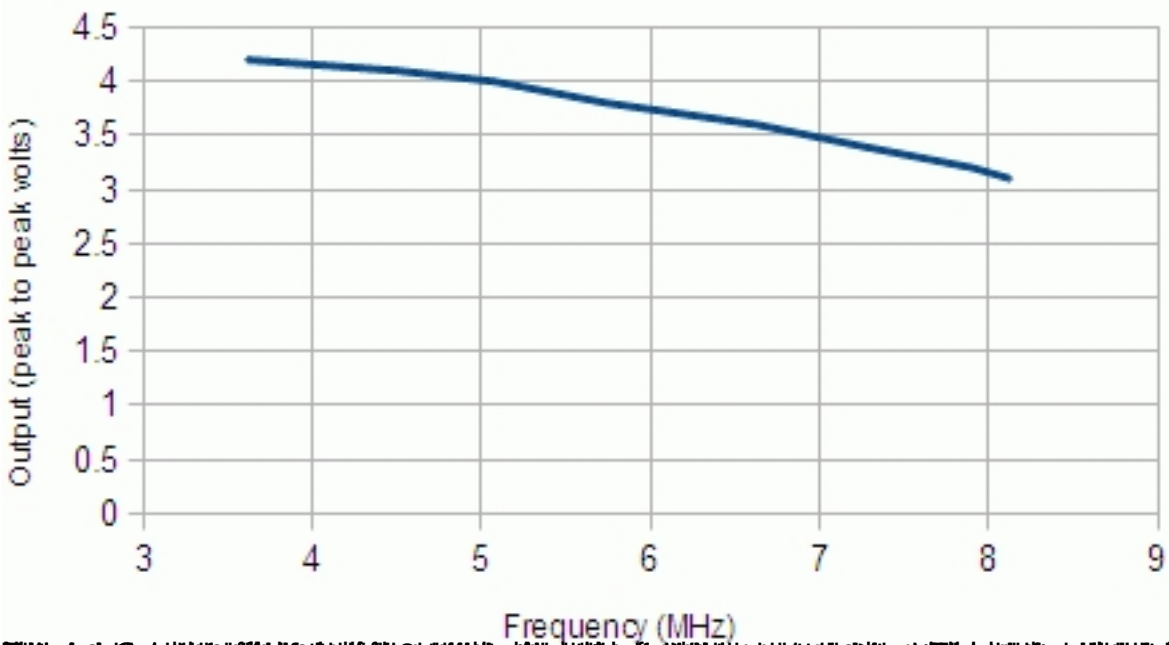
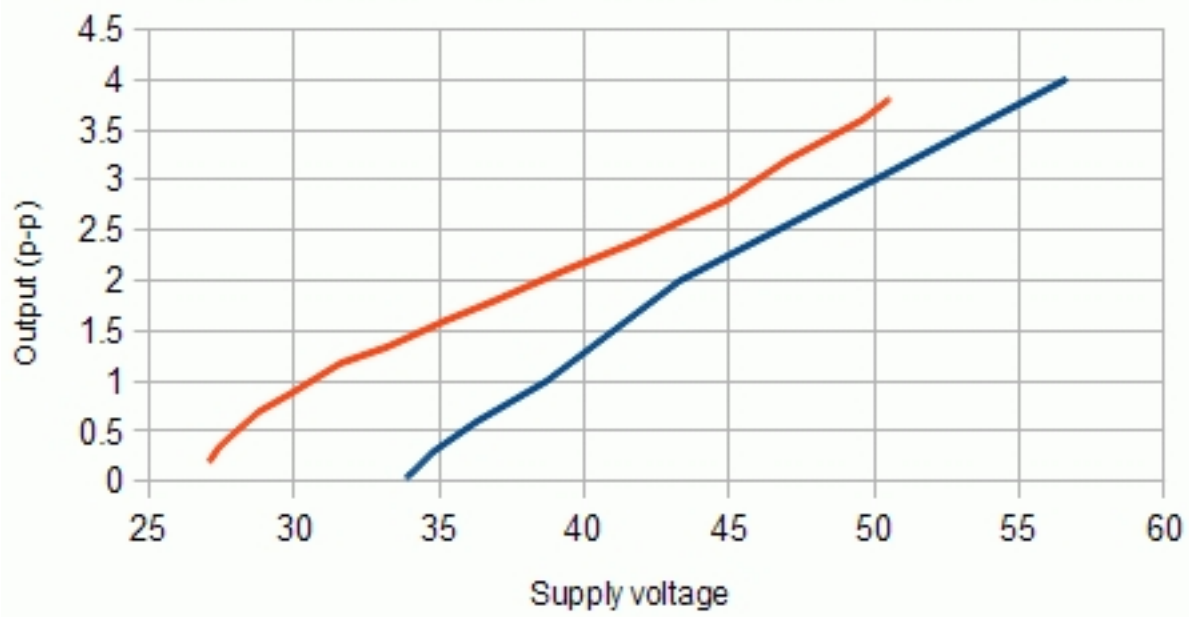
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