E. P. Dollard
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2029 HRS GMT
18 JAN 2014

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ANY VACUUM TUBE CONFIGURATION OTHER THAN GRID IN - PLATE OUT IS "OUTSIDE OF THE BOX" SO TO SPEAK. LITTLE REFERENCE EXIST IN THIS MATTER. THE BOOK "REFERENCE DATA FOR RADIO ENGINEERS" GIVES THE BASIC RELATION FOR CATHODE IN AND CATHODE OUT. THE 6AS7 AND 6Y6 ARE THE TUBES MADE FOR CATHODE OUT. THE 6AS7 HAS A VERY HIGH TRANSCONDUCTANCE BUT NO REAL AMPLICATION FACTOR, THUS NO ONE USES IT. BUT IT IS TRANSCONDUCTANCE THAT DOES THE WORK AND THE 6AS7 HAS GOT LOTS OF IT. ALSO IN MINI FORM IS THE

6S4 & 12BH (HIGH PWR)

AND

6J6 & 6J4 (LOW POWER)

THESE ALL HAVE THE SAME GEOMETRY

THAT THE 6AS7G HAS. THE 6336 IS EVEN BIGGER AND ANOTHER VERSION OF IT EXISTS BUT DONT REMEMBER THE NUMBER. 65**, ?

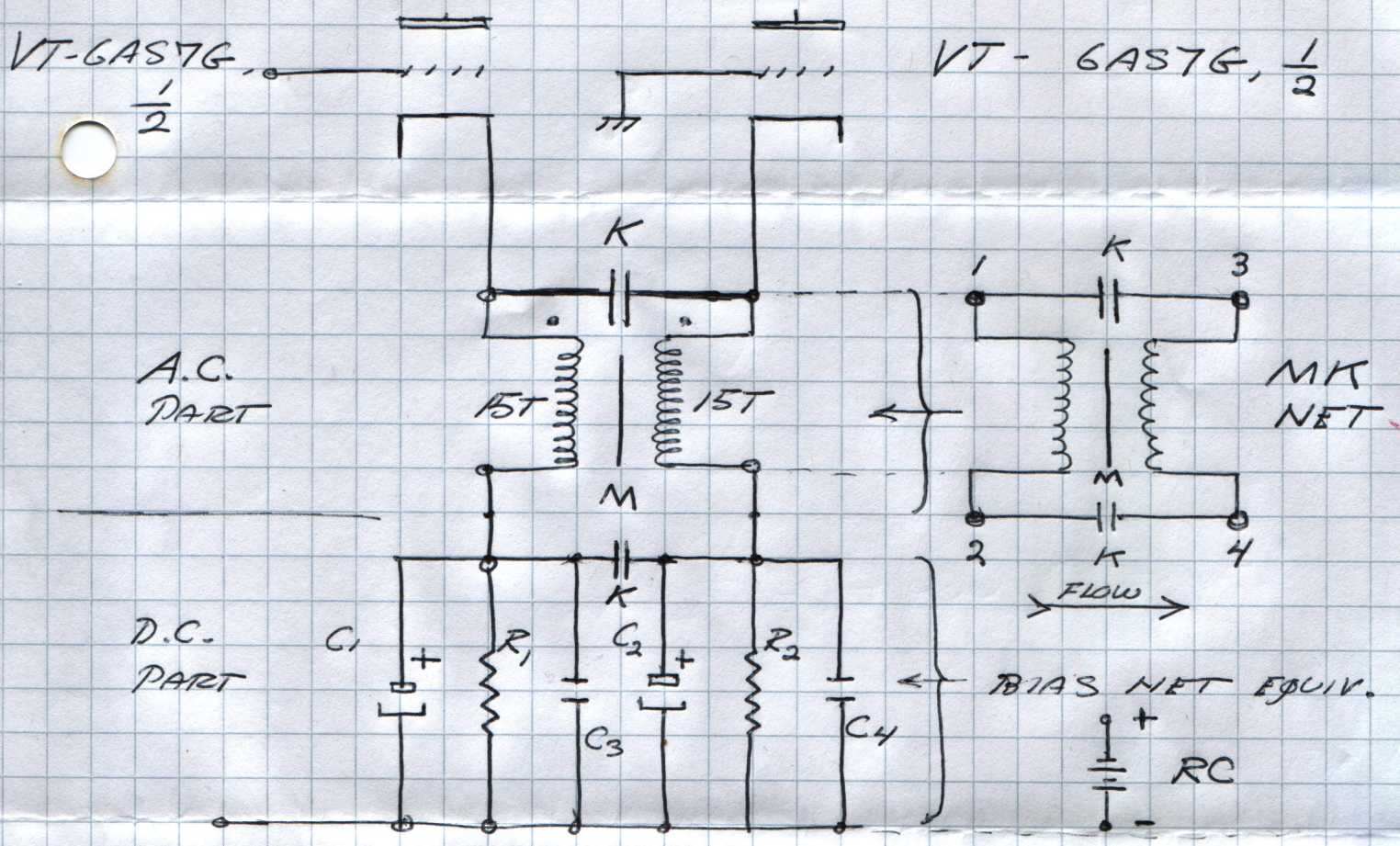
SO, IN CONSTRUCTING THESE CIRCUITS YOU ARE TAKING ON A TASK IN UNCHARTED TERRITORY, BUT THAT IS THE FUN OF ENGINEERING. USING THE METAL 6L6 AS A GRID IN - PLATE OUT FOR THE BOOSTING OF A TEST OSCILLATOR IS AN IMPORTANT TOOL, A WORKING DESIGN AND UNIT WOULD BE HELPFULL TO THE EXPERIMENTER. ONE I SENT YOU IS FINE.

THE GENERAL COMPLICATION IS MAKING A HIGH FREQUENCY TRANSFORMER. FERRITE IS A LOUSY TRANSFORMER MATERIAL BUT IS WHAT'S THERE. FOR H.F. THE CORE SHOULD BE VERY THIN TAPE WOUND AT RIGHT ANGLES TO THE WIRE. THIS IS A REQUIREMENT FOR MUTUAL INDUCTANCE IN CORE TRANSFORMERS, A QUADRATURE CONDUCTILE PATH MUST EXIST IN THE CORE. AMIDON COMPANY HAS TOROID FERRITES THAT WORK OK, THE ONE WITH $\mu = 125$ IS BEST. 30 TURNS* ON A HALF INCH CORE IS A GOOD PRIMARY FOR THE 6L6 PLATE. A 10 TURN SECONDARY WORKS OK AND IT MUST USE THE SAME COPPER MASS AS THE PRIMARY. THREE PRIMARY WIRES IN PARALLEL FOR TEN TURNS DOES THIS. FOR THE 6AS7 CATHODE TRANSFORMER USE A ONE INCH $\mu = 125$ CORE WITH 15 TURNS×, THIS OFF THE TOP OF MY HEAD. 10 TURNS MAY WORK?

THE LONGITUDINAL COUPLING NETWORK MK IS SHOWN IN THE DIAGRAM;

* 22 GUAGE

× 14 GUAGE



K, 0.1 μFd MYLAR, 100 VOLT

C_1 C_2 1.0 μFd TANTALUM, 100 VOLT

R_1 R_2 BIAS RESISTORS, IN SPECS.

C_3 C_4 0.05 μFd CERAMICS, TWO IN PARALLEL FOR C_3 & TWO IN PARALLEL FOR C_4, 100 VOLT.

M, AMIDON ONE INCH μ 125 CORE

THIS INFORMATION ON CIRCUITS / TUBE CAN GO AS IS ON THE E.G. FORUM, ITS BEST IT DOES.

73 DE N6KPH