



(adjust R3 R4
for R1 center
position)

r1 closes on:
RX & NB on

(adjust R14
for correct
CW shift)

VFO 70K-2

D1: Varicap
BA 102 / ECG 614
C = 33pF @ 4V
C2/30 = 3.2

V301
C303
L304
original PTO parts

Tr1, Tr2: general purpose NPN transistor
D2: Z-diode 20V 1/2 W
R1s1, R1s2: 5V reed relais SPST, DIL package

R1:
RIT control
+/- 5 kHz

RIT + CW shift for Collins KWM-2

designed by Ernst Schroeder DJ7HS

(c) 1998

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Ernst Schroeder
efs
.SUBCKT V 301 30 3 A S G K
*
* Calculate contribution to cathode current
*
Eat      at      0      VALUE={0.636*ATAN(V(A,K)/10)}
Eme      me      0      VALUE={PWR(LIMIT{V(A,K),0,2000},1.5)/1300}
Egs      gs      0      VALUE={LIMIT{V(A,K)/600+V(S,K)/14+V(G,K)*0.65,0,1E6}}
Egs2     gs2     0      VALUE={PWRS(V(gs),1.5)*1.45E-3}
Ecath    cc      0      VALUE={LIMIT{V(gs2)*V(at),0,V(me)}}
*
* Calculate anode current
*
Ga       A       K       VALUE={V(cc)}
*
* Calculate screen current
*
Escrn    sc      0      VALUE={0.7*V(gs2)*(1.1-V(at))}
Gs       S       K       VALUE={V(sc)*LIMIT{V(S,K),0,10}/10}
*
* Grid current
*
Gg       G       K       VALUE={PWR(LIMIT{V(G,K)+1,0,1E6},1.5)*(1.25-V(at))*650E-6}
*
* Capacitances
*
Cg1      G       K       7.5p
Cak      A       K       9p
Cg1a     G       A       0.7p

.ENDS V 301 30 3

.MODEL BA102 D ()
.MODEL Z20 D ()
.MODEL 1N4001 D ()
.MODEL 1N4148 D ()

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