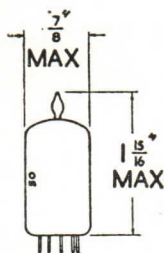
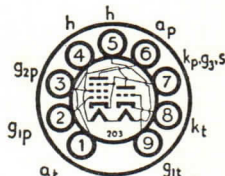


Current Equipment Type



B9A (Noval) Base

TYPE ECF80 MINIATURE TRIODE PENTODE FREQUENCY CHANGER



The BRIMAR ECF80 is a triode pentode with separate cathodes designed for use as a frequency changer in television equipment up to 220 Mc/s.

Heater Current	...	...	...	...	...	...	...	...	...	0.43 amp.
Heater Voltage	...	...	...	...	...	...	...	...	...	6.3 volts

RATINGS

	Triode	Pentode	
Anode Voltage ($I_a = 0$)	550	550	volts max.
Anode Voltage	250	250	volts max.
Anode Dissipation	1.5	1.7	watts max.
Screen Voltage ($I_a = 0$)	—	550	volts max.
Screen Voltage ($I_k = 14$ mA)	—	175	volts max.
Screen Voltage ($I_k \leq 10$ mA)	—	200	volts max.
Screen Dissipation ($P_a > 1.2$ W)	—	0.5	watts max.
Screen Dissipation ($P_a < 1.2$ W)	—	0.75	watts max.
Cathode Current	14	14	mA max.
Control Grid Resistance	500	—	k Ω max.
Control Grid Resistance (cathode bias)	—	1.0	M Ω max.
Control Grid Resistance (fixed bias)	—	500	k Ω max.
Heater-Cathode Potential (cathode negative)	100	100	volts max.
Heater-Cathode Potential (cathode positive)*	200	200	volts max.

* Maximum d.c. component 120 volts.

CHARACTERISTICS

	Triode	Pentode	
Anode Voltage	100	170	volts
Screen Voltage	—	170	volts
Control Grid Voltage	-2	-2	volts
Anode Current	14	10	mA
Screen Current	—	2.8	mA
Mutual Conductance	5	6.2	mA/V
Amplification Factor	20	—	
Inner Amplification Factor (μ_{g1-g2})	—	47	
Anode Impedance (approx.)	4	400	k Ω
Input Impedance at 50 Mc/s.	—	10	k Ω
Equivalent noise resistance	—	1.5	k Ω

TYPICAL OPERATION AS A MIXER (Pentode Section)

Anode Voltage	170	170	volts
Screen Voltage	170	170	volts
Grid Leak Resistor	100	100	k Ω
Cathode Bias Resistor	330	820	k Ω
Heterodyne Voltage	3.5	3.5	volts rms
Anode Current	6.5	5.2	mA
Screen Current	2.0	1.5	mA
Grid Current	20	0	μ A
Conversion Conductance	2.2	2.1	mA/V
Input Impedance	800	870	k Ω

INTER-ELECTRODE CAPACITANCES (measured without external shield)

Pentode Grid 1 to Pentode Anode	...	...	0.025 pF
Pentode Input	...	...	5.2 pF
Pentode Output	...	...	3.4 pF
Triode Grid to Triode Anode	...	...	1.5 pF
Triode Grid to Triode Cathode and Heater	...	...	2.5 pF
Triode Anode to Triode Cathode and Heater	...	...	1.8 pF
Pentode Anode to Triode Anode	...	...	0.07 pF
Pentode Anode to Triode Grid	...	...	0.02 pF
Pentode Grid 1 to Triode Anode	...	...	0.16 pF

