

ECH81

TRIODE HEPTODE

HEATER

V_h	6.3	V
I_h	300	mA

DIMENSIONS

Max. Overall Length	67.5	mm
Max. Seated Height	60.5	mm
Max. Diameter	22.2	mm

CAPACITANCES

C_{ah-at}	0.20	pF
C_{ah-gt}	<0.09	pF
$C_{ah-(g3+gt)}$	<0.35	pF
C_{g1-at}	<0.06	pF
C_{g1-gt}	<0.17	pF
$C_{g1-(g3+gt)}$	<0.45	pF

Heptode Section

$C_{in(g1)}$	4.8	pF
$C_{in(g3)}$	6.0	pF
C_{out}	7.9	pF
C_{a-g1}	<0.006	pF
C_{g1-g3}	<0.3	pF
C_{g1-h}	<0.17	pF
C_{g3-h}	<0.06	pF

Triode Section

C_{in}	2.6	pF
C_{out}	2.1	pF
C_{a-g}	1.0	pF
C_{g-h}	<0.02	pF

LIMITING VALUES

Heptode Section

V_a max.	300	V
p_a max.	1.7	W
V_{g2+g4} max.	125	V
V_{g2+g4} max. ($I_a < 1$ mA)	300	V
p_{g2+g4} max.	1.0	W
I_k max.	12.5	mA
V_{h-k} max.	100	V

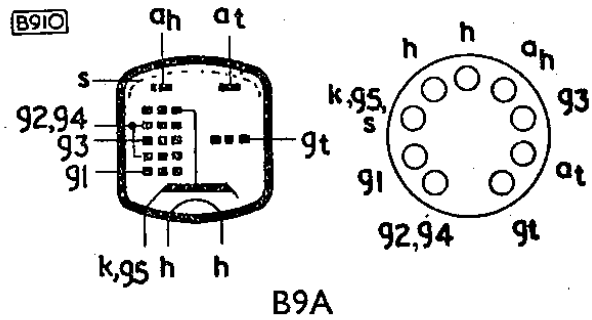
Triode Section

V_a max.	250	V
p_a max.	800	mW
I_k max.	6.5	mA

REPLACEMENT FOR:

X719, 6AJ8—Direct.

TH13C—Change base. Connect 22Ω 3W resistor in series with heater. Join pins 7 and 9. Receiver may require realigning.



OPERATING CONDITIONS AS A FREQUENCY CHANGER

Heptode Section

$V_a = V_b$	250	250	250	V
R_{g2+g4}	22	18*	22†	kΩ
R_{g3+gt}	47	47	47	kΩ
V_{g1}	-2.0	-1.9	-2.0	V
V_{g2+g4}	103	97	92	V
I_a	3.25	3.0	2.5	mA
I_{g2+g4}	6.7	6.1	5.5	mA
I_{g3+gt}	200	200	200	μA
g_c	775	750	700	μA/V
r_a	1.0	1.0	1.0	MΩ
R_{eq}	70	70	66	kΩ
† V_{g1}	-28.5	-28.5	-28.5	V

†For 100 : 1 reduction in g_c .

*Common screen grid resistor for ECH81 and EF85. The current through this resistor is 8.5mA.

†Common screen grid resistor for ECH81 and EBF80. The current through this resistor is 7.2mA.

Triode Section

V_b	250	V
R_{at}	33	kΩ
R_{gt+g3}	47	kΩ
I_{gt+g3}	200	μA
I_{at}	4.5	mA
g_m (effective)	650	μA/V

CHARACTERISTICS

Triode Section

V_a	100	V
I_a	13.5	mA
V_g	0	V
g_m	3.7	mA/V
μ	22	