RAYTHEON

TECHNICAL INFORMATION SERVICE

Technical Information

6JL8
8JL8

TRIODE–PENTODE

The 6JL8 is a heater–cathode type miniature tube containing a sharp cut–off pentode and a medium mu triode. The triode is suitable for use as a voltage amplifier or phase inverter and the pentode as a power amplifier.

The 8JL8 is identical to the 6JL8 except for heater characteristics. Also it has the controlled heater warm–up characteristic desirable for use in series–string operation.

ELECTRICAL DATA

HEATER CHARACTERISTICS:	6JL8	8JL8
Heater Voltage (ac or dc)	6.3	8.0 ± 10%□ volts
Heater Current	0.750●	0.600 amp
Maximum Heater–Cathode Voltage:		
Heater Positive with Respect to Cathode		
DC Component		100 volts
Total DC and Peak		200 volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	200 volts
Heater Warm-up Time *	---	11.0 sec.

DIRECT INTERELECTRODE CAPACITANCES: pf	Without shield
Pentode Section	
Grid #1 to plate: (g1 to p) (max.)	0.1 pf
Input: g1 to (h+k+g2+g3+int. shield)	11.0 pf
Output: p to (h+k+g2+g3+int. shield)	4.2 pf
Triode Section	
Grid to plate: (g to p)	4.4 pf
Input: g to (h + k)	2.4 pf
Output: p to (h + k)	0.36 pf
Coupling (max.)	
Triode grid to pentode plate	0.018 pf
Pentode g#1 to triode plate	0.005 pf
Pentode plate to triode plate	0.17 pf

DESIGN MAXIMUM RATINGS: (See EIA standard RS–239)

	Triode	Pentode
Plate voltage	330	330 volts
Grid #2 voltage	---	175 volts
Positive DC grid #1 voltage	0	0 volts
Plate dissipation	2.0	5.0 watts
Grid #2 dissipation	---	1.1 watts
Grid #1 resistance (max.)	---	---
Fixed bias	0.5	0.25 meg
Cathode bias	1.0	1.0 meg

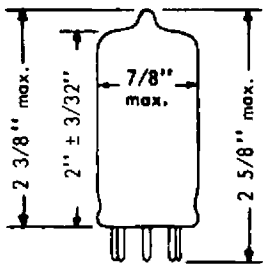
CHARACTERISTICS AND TYPICAL OPERATION:

	Triode	Pentode
Plate voltage	150	300 volts
Grid #2 voltage	---	150 volts

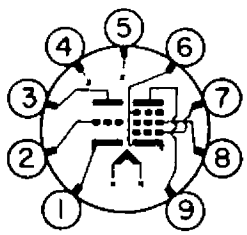
MECHANICAL DATA

ENVELOPE . . . . . T–6½ glass
BASE . . . . miniature button 9–pin
CATHODE . . . coated unipotential
MOUNTING POSITION . . . . any

PHYSICAL DIMENSIONS



BASING 9DX



BOTTOM VIEW

TERMINAL CONNECTIONS

Pin 1 cathode, triode
Pin 2 grid, triode
Pin 3 plate, triode
Pin 4 heater
Pin 5 heater
Pin 6 cathode grid #3 and shield, pentode
Pin 7 grid 1, pentode
Pin 8 grid 2, pentode
Pin 9 plate, pentode

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ELECTRICAL DATA (Cont'd.)

CHARACTERISTICS AND TYPICAL OPERATION: (Cont'd.)

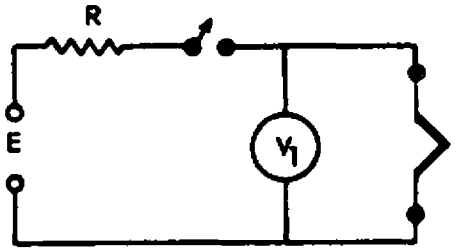
	Triode	Pentode	
Grid #1 voltage	---	-3.5	volts
Cathode resistor	150	---	
Amplification factor	35	---	
Transconductance	4700	11500	μmhos
Plate resistance (approx.)	7500	60000	ohms
Plate current	10	---	
Screen current	---	---	
Peak AF grid #1 voltage	---	3	volts
Zero-signal plate current	---	25	ma
Zero-signal grid #2 current	---	5	ma
Max.-signal plate current	---	30	ma
Max.-signal grid #2 current	---	7.5	ma
Load resistance	---	5000	ohms
Total harmonic distortions (approx.)	---	10	per cent
Max.-signal power output	---	1.8	watts

□ The equipment designer shall design equipment so that the heater voltage is centered at the specified bogey value heater supply variations restricted to maintain heater voltage within the specified tolerance.

● Heater current at bogey heater voltage.

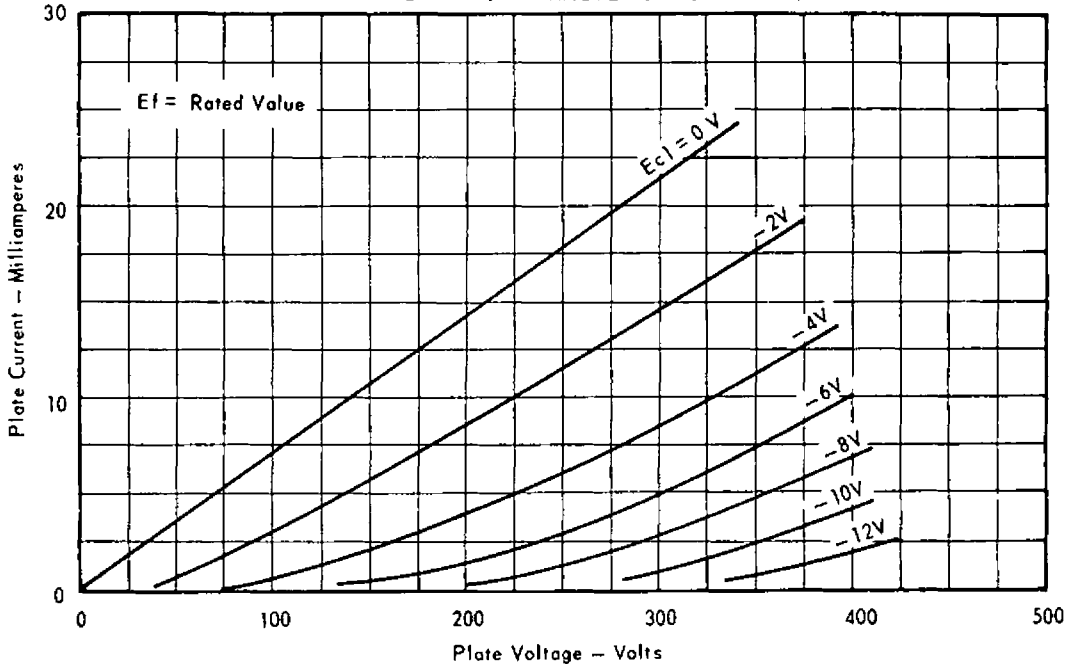
* *Heater warm-up time is defined as the time required, in the circuit shown at the right, for the voltage across the heater terminals to increase from zero to the heater test voltage (V_1).*

FOR TYPE	*8JL8*	
E =	*32*	*volts (RMS or DC)*
V_1 =	*6.4*	*volts (RMS or DC)*
R =	*40*	*ohms*



Heater of Tube under Test

AVERAGE PLATE CHARACTERISTICS – TRIODE



AVERAGE PLATE CHARACTERISTICS – PENTODE