from JEDEC release #3172, March 6, 1961

19HV8

TRIODE—PENTODE

The 19HV8 is a miniature triode-pentode designed for use in radio receivers employing 150-milliampere, series-connected heaters. The pentode section is intended to serve as an intermediate-frequency amplifier and the triode as an audio-frequency voltage amplifier.

GENERAL

Electrical

Cathode - Coated Unipotential

Heater Characteristics and Ratings (Design-Maximum Rating System)			
Heater Voltage, AC or DC*		18.9	Volts
Heater Current+		0.15±0.009	Amperes
	With Shield‡	Without Shield	
→ Pentode Section			
Grid-Number 1 to Plate: (Pg1 to Pp)	0.007	0.019	pf
Input: Pg1 to (h + Pk + Pg2 + Pg3 + i.s.)	5.5	5.5	pf
Output: Pp to (h + Pk + Pg2 + Pg3 + i.s.)	3.4	2.4	pf
Heater to Cathode: (Pk to h)	2.8§	2.8	pf
→ Triode Section			
Grid to Plate: (Tg to Tp)	0.09	0.09	pf
Input: Tg to (Tk + h + Pk + Pg3 + i.s.)	1.9	1.7	pf
Output: Tp to (Tk + h + Pk + Pg3 + i.s.)	1.4	0.38	pf
Heater to Cathode: (Tk to h)	2.8§	2.8	pf

Mechanical

Mounting Position - Any
Envelope - T-6 1/2, Glass
Base - E9-1, Small Button 9-Pin
Outline Drawing - EIA 6-2

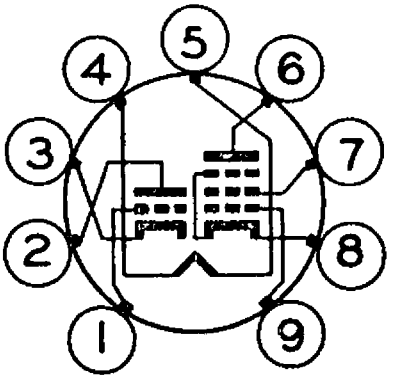
Maximum Diameter	7/8	Inches
Maximum Over-all Length	2 3/16	Inches
Maximum Seated Height	1 15/16	Inches

ETR-2186

TERMINAL CONNECTIONS

Pin 1 - Triode Grid
Pin 2 - Triode Plate
Pin 3 - Triode Cathode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Pentode Plate
Pin 7 - Pentode Grid Number 2 (Screen)
Pin 8 - Pentode Cathode, Grid Number 3, and Internal Shield
Pin 9 - Pentode Grid Number 1

BASING DIAGRAM



EIA 9FA

MAXIMUM RATINGS

Design-Maximum Values

	Pentode Section	Triode Section	
Plate Voltage	330	330	Volts
Screen Supply Voltage	330	---	Volts
Screen Voltage - See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0	0	Volts
Plate Dissipation	3.0	0.55	Watts
Screen Dissipation	0.55	---	Watts
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	Volts
→ Grid-Number 1 Circuit Resistance			
With Fixed Bias	0.25	0.5	Megohms
With Cathode Bias	1.0	1.0	Megohms

Design-maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions. The tube manufacturer chooses these values to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply voltage variation, equipment component variation, variation in characteristics of all other tubes in the equipment, equipment control adjustment, load variation, signal variation, and environmental conditions.

CHARACTERISTICS AND TYPICAL OPERATION

Average Characteristics	Pentode Section	Triode Section	
Plate Voltage	125	100	Volts
Screen Voltage	125	---	Volts
Grid-Number 1 Voltage	-1.0	-1.0	Volts
Amplification Factor	---	70	
Plate Resistance, approximate	200000	54000	Ohms
Transconductance	6500	1300	Micromhos
Plate Current	12	0.8	Milliamperes
Screen Current	4.0	---	Milliamperes
→ Grid-Number 1 Voltage, approximate Ib = 50 Microamperes	---	-1.5	Volts
Grid-Number 1 Voltage, approximate Ib = 20 Microamperes	-9	---	Volts

* Heater voltage at bogey heater current.

\+ For series heater operation, the equipment designer shall design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance.

‡ With external shield (EIA 315) connected to cathode of section under test unless otherwise indicated.

§ With external shield (EIA 315) connected to ground.

SCREEN RATING CHART