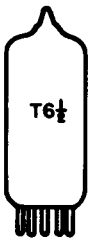
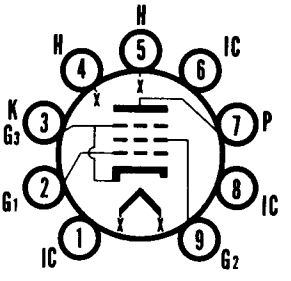
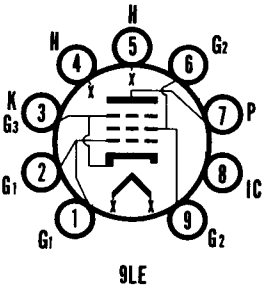




9CV

TYPES 7189
7189A



9LE

MECHANICAL DATA

Bulb	T-6½
Base	E9-1, Miniature Button 9-Pin
Outline	6-4
Basing	(7189A)-9LE, (7189)-9CV
Cathode	Coated Unipotential
Mounting Position	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage	6.3 Volts
Heater Current	760 Ma
Maximum Heater Voltage Range[1]	5.7-6.9 Volts
Heater-Cathode Voltage (Design Maximum Values)	
Heater Negative with Respect to Cathode	100 Volts Max.
Heater Positive with Respect to Cathode	100 Volts Max.

DIRECT INTERELECTRODE CAPACITANCES

Grid No. 1 to Plate	0.5 μμf Max.
Input	10.8 μμf
Output	6.5 μμf
Grid No. 1 to Heater	0.25 μμf Max.

RATINGS (Design Maximum Values)[1]

	Class AB_1 Pentode Conn.	Class AB_1 Ultra-linear Conn.
Plate Voltage	440	415 Volts Max.
Grid No. 2 Voltage (400V-7189A)	330	... Volts Max.
Plate Dissipation	13.2	13.2 Watts Max.
Grid No. 2 Dissipation (Zero Signal)	2.2	2.2 Watts Max.
Grid No. 2 Dissipation (Max. Signal)	4.4	4.4 Watts Max.
Cathode Current	72	72 Ma Max.
Grid No. 1 Circuit Resistance		
Fixed Bias	0.3	0.3 Megohm Max.
Cathode Bias	1.0	1.0 Megohm Max.

CHARACTERISTICS AND TYPICAL OPERATION

	Pentode Conn.		Ultra-linear Conn.
	Single Tube Class A_1	Class AB_1 Push-pull	Class AB_1 Push-pull
Plate Voltage	250	400	375 Volts
Grid No. 2 Voltage	250	300	Note 3 Volts
Grid No. 1 Voltage	−7.3	−15	... Volts
Cathode Resistor	...	...	220 Ohms
Grid Voltage (RMS)[4]		10.5	12.5 Volts
Plate Current (Zero Signal)	48	15	70 Ma
Plate Current (Max. Signal)	...	105	81 Ma

CHARACTERISTICS AND TYPICAL OPERATION (cont'd)

Grid No. 2 Current (Zero Signal)	5.5	1.6	... Ma
Grid No. 2 Current (Max. Signal)	...	25	... Ma
Transconductance	11.3K	...	... μmhos
Amplification Factor[5]	19.5	...	...
Plate Resistance	40K	...	... Ohms
Load Resistance (P to P)	...	8K	11K Ohms
Max. Signal Power Output	...	24	16.5 Watts
Total Harmonic Distortion	...	4.0	3 Percent

NOTES:

1. Design-Maximum Ratings are limiting values of operating and environmental conditions applicable to a bogey electron device of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.
   The device manufacturer chooses these values to provide acceptable serviceability of the device, taking responsibility for the effects of changes in operating conditions due to variations in device characteristics.
   The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey device under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, and environmental conditions.
2. Type 7189A Grid No. 2 is rated at 400 volts and Type 7189 Grid No. 2 is rated at 330 volts for pentode connected operation. Type 7189A is rated at 415 volts when used in an ultra-linear circuit.
3. Grid No. 2 voltage is obtained from taps located at 43 percent of the output transformer windings.
4. Per grid.
5. Measured from Grid No. 1 to Grid No. 2.

APPLICATION

The Types 7189 and 7189A are beam power pentode audio amplifiers designed for service in the output stage of high quality audio amplifiers or other equipment requiring high power output at relative low distortion.
Type 7189A differs from Type 7189 in having a higher Grid No. 2 voltage rating and in specifying the internal connections to Pin No. 1 and No. 6.