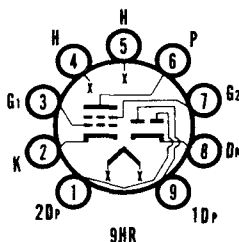


SYLVANIA TYPE 12DL8

DUO DIODE
SPACE-CHARGE GRID TETRODE

MECHANICAL DATA



Bulb.....	T-6 1/2
Base.....	E9-1, Miniature Button 9-Pin
Outline.....	6-3
Basing.....	9HR
Cathode.....	Coated Unipotential
Mounting Position.....	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS¹

Heater Voltage.....	12.6 Volts
Heater Current.....	0.55 Amp.
Heater Cathode Voltage (Design Center Values)	
Heater Negative with Respect to Cathode.....	30
Heater Positive with Respect to Cathode.....	30

DIRECT INTERELECTRODE CAPACITANCES

Tetrode Section

Grid No. 2 to Plate.....	14 $\mu\mu\text{f}$
Input: g2 to (g1 + k + h).....	12 $\mu\mu\text{f}$
Output: p to (g1 + k + h).....	1.3 $\mu\mu\text{f}$

Diode Section

Input: Dp1 to (k + h).....	1.6 $\mu\mu\text{f}$
Input: Dp2 to (k + h).....	1.6 $\mu\mu\text{f}$
Diode Plate No. 1 to Diode Plate 2.....	.03 $\mu\mu\text{f}$
Coupling: (Diode Plate No. 1 to Tetrode Grid No. 2).....	.02 $\mu\mu\text{f}$ Max.
(Diode Plate No. 2 to Tetrode Grid No. 2).....	.006 $\mu\mu\text{f}$ Max.

12DL8 (Cont'd)

MAXIMUM RATINGS (Design Center Values—Except as Noted)

Plate Voltage.....	30 Volts
Positive Grid No. 1 Voltage (Abs. Max.).....	16 Volts
Negative Grid No. 2 Voltage.....	20 Volts
Grid No. 2 Circuit Resistance.....	10 Megohms
Average Diode Current.....	5 Ma

CHARACTERISTICS

Class A1 Amplifier

Plate Voltage.....	12.6 Volts
Grid No. 1 (Space-Charge Grid) Voltage.....	12.6 Volts
Grid No. 2 (Control Grid) Voltage ²	-0.5 Volts
Plate Current.....	40 Ma
Grid No. 1 (Space-Charge Grid) Current.....	75 Ma
Transconductance ³	15000 μ mhos
Amplification Factor ³	7.2
Plate Resistance.....	480 Ohms
Diode Current with 10.0 Volts DC Applied (Each Diode).....	3 Ma

TYPICAL OPERATION

Class A1 Amplifier

Plate Voltage.....	12.6 Volts
Grid No. 1 (Space-Charge Grid) Voltage.....	12.6 Volts
Grid No. 2 (Control Grid) Voltage ⁴	-2.0 Volts
Peak AF Grid No. 2 Voltage.....	2.5 Volts
AF Signal Source Resistance.....	100000 Ohms
Plate Current ⁵ (Signal Applied).....	8.0 Ma
Grid No. 1 (Space-Charge Grid) Current.....	75 Ma
Load Resistance.....	800 Ohms
Power Output.....	40 mw
Total Harmonic Distortion (Max.).....	10 Percent

NOTES:

1. This tube is intended for use in automobile radios operated from a nominal 12-volt battery. Design of the tube is such that the heater will operate satisfactorily over the range 10.0 volts to 15.9 volts, and that the maximum ratings provide a safety factor for the wide voltage variation encountered with this type of supply.
2. Average contact potential developed across a 2.2 megohm resistor.
3. Measured from Grid No. 2 to Plate.
4. Bias voltage is developed across a 2.2 megohm resistor by means of Grid No. 2 rectification (obtained when applying the special signal voltage) and contact potential.
5. With no signal applied to Grid No. 2 and bias developed solely by contact potential, the plate current is 40 ma. (approx.).

APPLICATION

The Sylvania Type 12DL8 has a combined duo-diode and space-charge grid tetrode contained in a miniature envelope.

The diode section is intended for AVC or detector applications and the tetrode section is intended for use as a power amplifier driver.

It is designed primarily to operate where the heater plate and space-charge grid voltages are obtained directly from a 12-volt automotive storage battery.