



12DV8

DUPLEX-DIODE TETRODE

FOR DETECTOR AND AF DRIVER APPLICATIONS
IN AUTOMOBILE RECEIVERS

12DV8
ET-T1458
Page 1
5-57

DESCRIPTION AND RATING

The 12DV8 is a miniature duplex-diode, space-charge-grid tetrode intended for use as a combined detector, AVC rectifier, and transistor driver. The tetrode section of the tube is specially designed to operate with its plate and space-charge-grid voltages supplied directly from a 12-volt storage battery.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential	
Heater Voltage, AC or DC.....	12.6* Volts
Heater Current.....	0.375 Amperes
Direct Interelectrode Capacitances†	
Tetrode Grid-Number 2 to Plate.....	12 $\mu\mu\text{f}$
Tetrode Input.....	9.0 $\mu\mu\text{f}$
Tetrode Output.....	1.0 $\mu\mu\text{f}$
Tetrode Grid-Number 2 to Any Diode Plate, maximum.....	0.015 $\mu\mu\text{f}$
Diode-Number 1 Input.....	1.7 $\mu\mu\text{f}$
Diode-Number 2 Input.....	1.6 $\mu\mu\text{f}$
Diode-Number 1 Plate to Diode-Number 2 Plate, maximum....	0.10 $\mu\mu\text{f}$

MECHANICAL

Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin

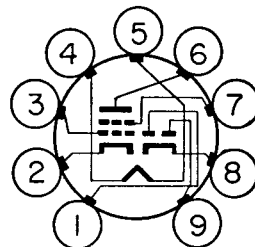
MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage.....	16 Volts
Negative Control-Grid Voltage.....	16 Volts
Space-Charge-Grid Voltage.....	16 Volts
Heater-Cathode Voltage	
Heater Positive with Respect to Cathode.....	16 Volts
Heater Negative with Respect to Cathode.....	16 Volts
Control-Grid Circuit Resistance.....	10 Megohms
Diode Current for Continuous Operation, Each Diode.....	5.0 Milliamperes

Design-Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur for the types of service for which the tube is rated. Therefore, the equipment designer must establish the circuit design so that initially and throughout equipment life no design-maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.

BASING DIAGRAM

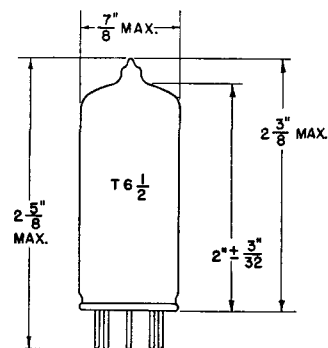


EIA 9HR

TERMINAL CONNECTIONS

- Pin 1—Diode Number 2 Plate
- Pin 2—Tetrode Cathode
- Pin 3—Tetrode Grid Number 1 (Space-Charge Grid)
- Pin 4—Heater
- Pin 5—Heater
- Pin 6—Tetrode Plate
- Pin 7—Tetrode Grid Number 2 (Control Grid)
- Pin 8—Diodes Cathode and Shield
- Pin 9—Diode Number 1 Plate

PHYSICAL DIMENSIONS



EIA 6-3

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage.....	12.6	Volts
Cathode Resistor.....	18	Ohms
Control Grid Resistor.....	4.7	Megohms
Space-Charge-Grid Voltage.....	12.6	Volts
Amplification Factor§.....	7.6	
Plate Resistance, approximate.....	900	Ohms
Transconductance§.....	8500	Micromhos
Plate Current.....	9.0	Milliamperes
Space-Charge-Grid Current.....	53	Milliamperes
Average Diode Current, Each Diode With 10 Volts DC Applied.....	3.0	Milliamperes

CLASS A AMPLIFIER

Plate Voltage.....	12.6	Volts
Cathode Resistor.....	18	Ohms
Control-Grid Resistor.....	4.7	Megohms
Space-Charge-Grid Voltage.....	12.6	Volts
Peak AF Control-Grid Voltage.....	1.2	Volts
AF Signal Source Resistance.....	300,000	Ohms
Maximum Signal Plate Current.....	6.8	Milliamperes
Space-Charge-Grid Current.....	54	Milliamperes
Load Resistance.....	1250	Ohms
Total Harmonic Distortion, approximate.....	3	Percent
Power Output.....	5	Milliwatts

* When used in automotive service from a 12-volt source, under no circumstances should the heater voltage be less than 10.0 volts or more than 15.9 volts. These extreme variations in heater voltage may be tolerated for short periods; however, operation at or near these absolute limits in heater voltage necessarily involves sacrifice in performance at low heater voltage and in life expectancy at high heater voltage. Equipment reliability can be significantly increased with improved supply-voltage regulation.

† Without external shield.

§ Control Grid to Plate.

ELECTRONIC COMPONENTS DIVISION

GENERAL  ELECTRIC

Schenectady 5, N. Y.