Electronic TUBES

12DV8

DUPLEX-DIODE TETRODE

FOR DETECTOR AND AF DRIVER APPLICATIONS IN AUTOMOBILE RECEIVERS

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 μμf
Tetrode Input	9.0 μμf
Tetrode Output	1.0 μμf
Tetrode Grid-Number 2 to Any Diode Plate, maximum	0.015 μμf
Diode-Number 1 Input	1.7 μμf
Diode-Number 2 Input	1.6 μμf
Diode-Number 1 Plate to Diode-Number 2 Plate, maximum	0.10 μμf

MECHANICAL

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

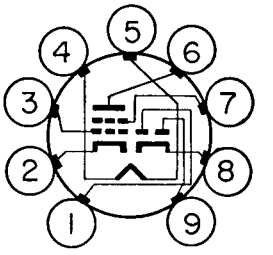
MAXIMUM RATINGS

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



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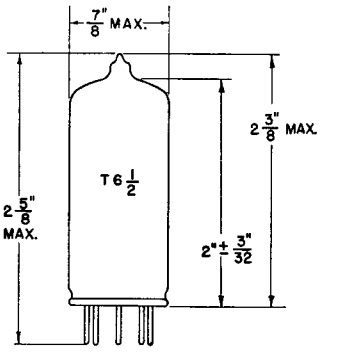
TERMINAL CONNECTIONS

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



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GENERAL ELECTRIC

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

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