



12DS7

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TWIN DIODE—POWER TETRODE

9-PIN MINIATURE TYPE

For use in automobile radio receivers
operating directly from 12-volt storage batteries

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage range. 10 to 15.9 dc volts

This voltage range is on an absolute basis. For long-est life, it is recommended that the heater be operated within the voltage range of 11 to 14 volts.

Current (Approx.) at

12.6 volts 0.4 amp

Direct Interelectrode Capacitances:^o

Tetrode Unit:

Grid No.2 to plate 12.5 μ f

Grid No.2 to cathode, grid No.1,

and heater 13 μ f

Plate to cathode, grid No.1, and heater. 2 μ f

Diode Units:

Diode plate No.1 to cathode and heater 0.5 μ f

Diode plate No.2 to cathode and heater 0.5 μ f

Diode plate No.1 to diode plate No.2 0.1 μ f

Tetrode grid No.2 to diode plate No.1. 0.15 max. μ f

Tetrode grid No.2 to diode plate No.2. 0.15 max. μ f

Characteristics, Class A₁ Amplifier (Tetrode Unit):

Heater Voltage 12.6 volts

Plate Voltage. 12.6 volts

Grid-No.2 (Control-Grid) Voltage:

Developed across a 2.2-megohm resistor -0.5 volt

Grid-No.1 (Space-Charge-Grid) Voltage. 12.6 volts

Plate Resistance (Approx.) 480 ohms

Amplification Factor, Grid No.2 to Plate 7.2

Transconductance, Grid No.2 to Plate 15000 μ hos

Plate Current. 40 ma

Grid-No.1 Current. 75 ma

Mechanical:

Operating Position Any

Maximum Overall Length 2-5/8"

Maximum Seated Length. 2-3/8"

Length, Base Seat to Bulb Top (Excluding tip). 2" \pm 3/32"

Diameter 0.750" to 0.875"

Dimensional Outline. See General Section

Bulb T6-1/2

^o: See next page.

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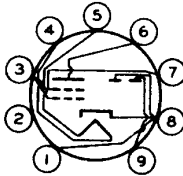


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TWIN DIODE-POWER TETRODE

Base Small-Button Noval 9-Pin (JETEC No.E9-1)
 Basing Designation for BOTTOM VIEW. 9JU

Pin 1 - Plate of Diode Unit No.2
 Pin 2 - No Connection
 Pin 3 - Grid No.1 of Tetrode Unit
 Pin 4 - Heater
 Pin 5 - Heater



Pin 6 - Plate of Tetrode Unit
 Pin 7 - Grid No.2 of Tetrode Unit
 Pin 8 - Cathode
 Pin 9 - Plate of Diode Unit No.1

TETRODE UNIT - AUDIO DRIVER

Maximum Ratings, Design-Center Values Except as Noted:

PLATE VOLTAGE	16	max.	volts
GRID-No.2 (CONTROL-GRID) VOLTAGE:			
Negative-bias value	-16	max.	volts
GRID-No.1 (SPACE-CHARGE-GRID) VOLTAGE			
(Absolute maximum)	16 ^o	max.	volts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode .	16	max.	volts
Heater positive with respect to cathode .	16	max.	volts

Typical Operation:

Cathode Bias

Heater Voltage.	12.6	volts
Plate-Supply Voltage.	12.6	volts
Plate VoltageObtained from indicated plate supply through series 100-henry choke having dc resistance of 150 ohms	
Grid-No.1 Supply Voltage.	12.6	volts
Grid-No.2 Supply Voltage.	0	volts
Grid-No.2 Resistor.	1.8	megohms
Cathode Resistor.	18	ohms
Peak AF Grid-No.2 Supply Voltage (Approx.):		
From 3.3-megohm signal source.	2.85	volts
Zero-Signal Plate Current (Approx.)	23	ma
Max.-Signal Plate Current	13	ma
Grid-No.1 Current	77	ma
Load Resistance	1250	ohms
Total Harmonic Distortion	8	%
Max.-Signal Power Output.	10	mw

Grid-No.2-Resistor Bias

Heater Voltage.	12.6	volts
Plate Voltage	12.6	volts
Grid-No.1 Voltage	12.6	volts

^o, [■]: See next page.



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Grid-No.2 Voltage:		
Obtained by rectification through a 2.2-megohm resistor.	-2	volts
Peak AF Grid-No.2 Voltage (Approx.):		
From 0.1-megohm signal source.	2.5	volts
Zero-Signal Plate Current (Approx.).	40	ma
Max.-Signal Plate Current.	8	ma
Grid-No.1 Current.	75	ma
Load Resistance.	800	ohms
Total Harmonic Distortion.	10	%
Max.-Signal Power Output	40	mw

Maximum Circuit Values:

Grid-No.2-Circuit Resistance	10 max. megohms
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DIODE UNITS — Two

Values are for Each Unit

Maximum Ratings, Design-Center Values:

PLATE CURRENT.	5 max.	ma
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	16 max.	volts
Heater positive with respect to cathode.	16 max.	volts

Characteristics:

Heater Voltage	12.6	volts
Plate Current for plate volts = 10	3	ma

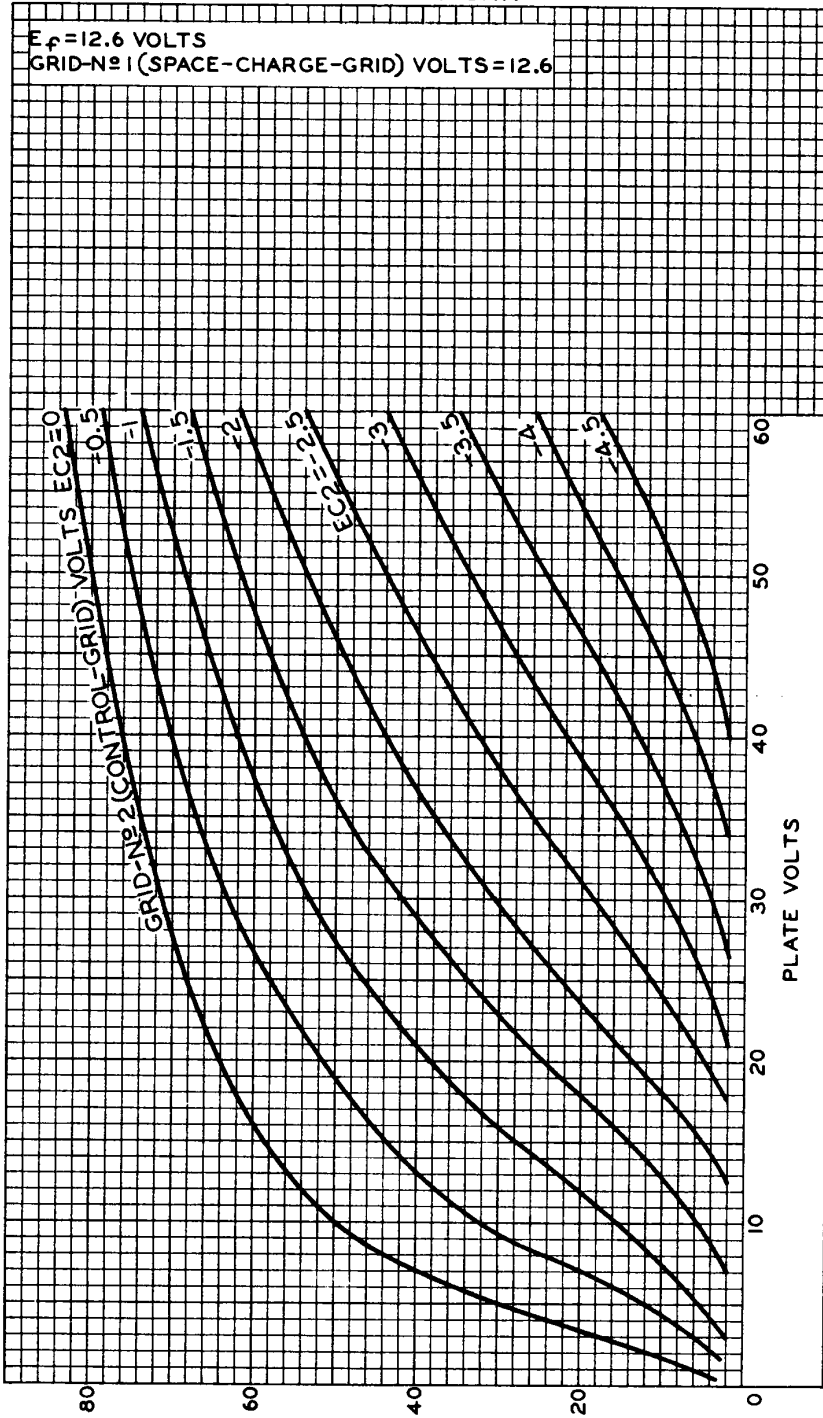
- without external shield.
- Under no circumstances should this absolute value be exceeded.

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AVERAGE PLATE CHARACTERISTICS TETRODE UNIT



80

60

40

20

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PLATE MILLIAMPERES

PLATE VOLTS

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-9670



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AVERAGE CHARACTERISTICS TETRODE UNIT

