



12J8

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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 Cathodes:

Voltage range. . . . . 10 to 15.9 . . . . . dc volts

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

Current (Approx.) at

12.6 volts . . . . . 0.325 . . . . . amp

Direct Interelectrode Capacitances:<sup>o</sup>

*Tetrode Unit:*

Grid No.1 to plate . . . . . 0.7  $\mu$ f

Grid No.1 to cathode, grid No.2, and heater . . . . . 10.5  $\mu$ f

Plate to cathode, grid No.2, and heater . . . . . 4.4  $\mu$ f

Tetrode grid No.1 to plate of diode unit No.1. 0.04 max.  $\mu$ f

Tetrode grid No.1 to plate of diode unit No.2. 0.015 max.  $\mu$ f

### Mechanical:

Operating Position . . . . . Any

Maximum Overall Length . . . . . 2-3/16"

Maximum Seated Length. . . . . 1-15/16"

Length, Base Seat to Bulb Top (Excluding tip) 1-9/16"  $\pm$  3/32"

Diameter . . . . . 0.750" to 0.875"

Dimensional Outline. . . . . See General Section

Bulb . . . . . T6-1/2

Base . . . . . Small-Button Noval 9-Pin (JEDEC No.E9-1)

Basing Designation for BOTTOM VIEW . . . . . 9GC

Pin 1—Grid No.1 of Tetrode Unit

Pin 2—Cathode of Tetrode Unit

Pin 3—Grid No.2 of Tetrode Unit

Pin 4—Heater

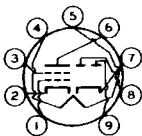
Pin 5—Heater

Pin 6—Plate of Tetrode Unit

Pin 7—Cathode of Diode Units No.1 & No.2

Pin 8—Plate of Diode Unit No.2

Pin 9—Plate of Diode Unit No.1



## TETRODE UNIT — AUDIO DRIVER

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE. . . . . 30 max. volts

GRID—No.2 (SCREEN—GRID) VOLTAGE. . . . . 30 max. volts

PEAK HEATER—CATHODE VOLTAGE:

Heater negative with respect to cathode. 30 max. volts

Heater positive with respect to cathode. 30 max. volts

<sup>o</sup> Without external shield.

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### Typical Operation with 12.6 Volts on Heater:

|  |      |            |
|--|------|------------|
| Plate Voltage. . . . .                       | 12.6 | volts      |
| Grid-No.2 Voltage. . . . .                   | 12.6 | volts      |
| Grid-No.1 (Control-Grid) Voltage . . . . .   | 0    | volts      |
| AF Grid-No.1 Voltage (RMS) . . . . .         | 1.6  | volts      |
| Grid-No.1 Resistor . . . . .                 | 2.2  | megohms    |
| Grid-No.1-Resistor Bypass Capacitor. . . . . | 1    | $\mu$ f    |
| Zero-Signal Plate Current. . . . .           | 12   | ma         |
| Zero-Signal Grid-No.2 Current. . . . .       | 1.5  | ma         |
| Transconductance . . . . .                   | 5500 | $\mu$ mhos |
| Plate Resistance (Approx.) . . . . .         | 6000 | ohms       |
| Load Resistance. . . . .                     | 2700 | ohms       |
| Total Harmonic Distortion. . . . .           | 5    | %          |
| Max.-Signal Power Output . . . . .           | 20   | mw         |

### Maximum Circuit Values:

|  |         |         |
|--|---------|---------|
| Grid-No.1-Circuit Resistance . . . . . | 10 max. | megohms |
|--|---------|---------|

### DIODE UNITS — Two

#### Maximum Ratings, Design-Center Values:

*Values are for Each Unit*

|  |         |       |
|--|---------|-------|
| PLATE CURRENT. . . . .                           | 5 max.  | ma    |
| PEAK HEATER-CATHODE VOLTAGE:                     |         |       |
| Heater negative with respect to cathode. . . . . | 30 max. | volts |
| Heater positive with respect to cathode. . . . . | 30 max. | volts |

### Characteristics with 12.6 Volts on Heater:

|  | Diode<br>Unit No.1 | Diode<br>Unit No.2 |    |
|--|--------------------|--------------------|----|
| Plate Current for plate volts = 5. . . . . | 8.5                | 12                 | ma |