



12EL6

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**TWIN DIODE—HIGH-MU TRIODE**

7-PIN MINIATURE TYPE

*For use in automobile radio receivers operating directly  
from 6-cell storage-battery systems*

**GENERAL DATA****Electrical:**

Heater, for Unipotential Cathode:

Voltage range (DC). . . . . 10 to 15.9 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 . . . . . 0.15 amp

Direct Interelectrode Capacitances

(Approx.):<sup>o</sup>Triode grid to triode plate . . . . . 1.8  $\mu\text{f}$ Triode grid to cathode and heater . . . . . 2.2  $\mu\text{f}$ Triode plate to cathode and heater. . . . . 1  $\mu\text{f}$ Diode-No.1 plate to diode-No.2 plate. . . . . 1  $\mu\text{f}$ **Characteristics, Class A<sub>1</sub> Amplifier (Triode Unit):**

Heater Voltage. . . . . 12.6 volts

Plate Voltage . . . . . 12.6 volts

Grid Voltage. . . . . 0 volts

Amplification Factor. . . . . 55

Plate Resistance (Approx.). . . . . 45000 ohms

Transconductance. . . . . 1200  $\mu\text{mhos}$ Plate Current . . . . . 750  $\mu\text{a}$ **Mechanical:**

Operating Position. . . . . Any

Maximum Overall Length. . . . . 2-1/8"

Maximum Seated Length . . . . . 1-7/8"

Length, Base Seat to Bulb Top (Excluding tip). . . 1-1/2"  $\pm$  3/32"

Diameter. . . . . 0.650" to 0.750"

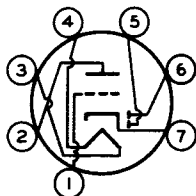
Dimensional Outline . . . . . See General Section

Bulb. . . . . T5-1/2

Base. . . . . Small-Button Miniature 7-Pin (JEDEC No.E7-1)

Basing Designation for BOTTOM VIEW. . . . . 7FB

Pin 1—Triode Grid  
Pin 2—Triode Plate  
Pin 3—Heater  
Pin 4—Heater



Pin 5—Diode-No.2  
Plate  
Pin 6—Diode-No.1  
Plate  
Pin 7—Cathode

**TRIODE UNIT — AMPLIFIER — Class A<sub>1</sub>****Maximum Ratings, Design-Center Values:**

PLATE VOLTAGE . . . . . 30 max. volts

CATHODE CURRENT . . . . . 20 max. ma

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

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## PEAK HEATER-CATHODE VOLTAGE:

|                                              |         |       |
|----------------------------------------------|---------|-------|
| Heater negative with respect to cathode. . . | 30 max. | volts |
| Heater positive with respect to cathode. . . | 30 max. | volts |

## Typical Operation:

*As resistance-coupled amplifier*

|                                                               |      |         |
|---------------------------------------------------------------|------|---------|
| Heater Voltage . . . . .                                      | 12.6 | volts   |
| Plate Supply Voltage . . . . .                                | 12.6 | volts   |
| Grid Voltage . . . . .                                        | 0    | volts   |
| Plate Load Resistor. . . . .                                  | 1    | megohm  |
| Grid Resistor. . . . .                                        | 1    | megohm  |
| Grid Resistor of Following Stage . . . . .                    | 2    | megohms |
| Input Capacitor. . . . .                                      | 0.02 | $\mu$ f |
| Output Capacitor . . . . .                                    | 0.01 | $\mu$ f |
| Voltage Gain at 400 cps with RMS output<br>volts = 1. . . . . | 16   |         |

## Maximum Circuit Values:

|                                  |         |         |
|----------------------------------|---------|---------|
| Grid-Circuit Resistance. . . . . | 10 max. | megohms |
|----------------------------------|---------|---------|

## DIODE UNITS — Two

*Values are for Each Unit*

## Maximum Ratings, Design-Center Values:

|                                            |         |       |
|--------------------------------------------|---------|-------|
| PLATE CURRENT. . . . .                     | 1 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:

|                                              |      |       |
|----------------------------------------------|------|-------|
| Heater Voltage . . . . .                     | 12.6 | volts |
| Plate Current for plate volts = 10 . . . . . | 2    | ma    |