

# 12DE8

## Diode—Remote-Cutoff Pentode

### 9-PIN MINIATURE TYPE

For Automobile Radio Receivers Operating  
Directly from 6-Cell Storage Batteries

#### GENERAL DATA

##### Electrical:

Heater, for Unipotential Cathodes:  
Voltage range . . . . . 10 to 15.9 volts  
*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 . . . . . 0.2 amp  
Direct Interelectrode Capacitances:▲

##### Pentode Unit:

Grid No.1 to plate. . . . . 0.006 max.  $\mu\mu\text{f}$   
Grid No.1 to cathode, grid No.3  
& internal shield, grid No.2,  
and heater. . . . . 5.5  $\mu\mu\text{f}$   
Plate to cathode, grid No.3  
& internal shield, grid No.2,  
and heater. . . . . 5.7  $\mu\mu\text{f}$

##### Diode Unit:

Plate to cathode, pentode grid No.3  
& internal shield, and heater . . . . . 3.7  $\mu\mu\text{f}$   
Cathode to plate and heater . . . . . 5.7  $\mu\mu\text{f}$   
Pentode grid No.1 to diode plate. . . . . 0.018 max.  $\mu\mu\text{f}$   
Pentode plate to diode plate. . . . . 0.012 max.  $\mu\mu\text{f}$   
Pentode grid No.1 to diode cathode. . . . . 0.13 max.  $\mu\mu\text{f}$   
Pentode plate to diode cathode. . . . . 0.0016 max.  $\mu\mu\text{f}$

##### Characteristics, Class A<sub>1</sub> Amplifier (Pentode Unit):

Heater Voltage. . . . . 12.6 volts  
Plate Voltage . . . . . 12.6 volts  
Grid No.3 . . . . . *Connected to cathode at socket*  
Grid-No.2 Voltage . . . . . 12.6 volts  
Grid-No.1 Voltage:  
Developed across a 2.2-megohm  
grid resistor . . . . . -0.8 volt  
Plate Resistance (Approx.). . . . . 0.3 megohm  
Transconductance. . . . . 1500  $\mu\text{mhos}$   
Plate Current . . . . . 1.3 ma  
Grid-No.2 Current . . . . . 0.5 ma  
Grid-No.1 Voltage (Approx.) for  
transconductance ( $\mu\text{mhos}$ ) = 10 . . . . . -6 volts

##### 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*



# 12DE8

Bulb. . . . . T6-1/2  
 Base. . . . . Small-Button Noval 9-Pin (JEDEC No. E9-1)  
 Basing Designation for BOTTOM VIEW. . . . . 9HG

Pin 1 - Pentode Grid No.1		Pin 7 - Pentode Grid No.3, Internal Shield
Pin 2 - Diode Cathode		Pin 8 - Pentode Grid No.2
Pin 3 - Diode Plate		Pin 9 - Pentode Cathode
Pin 4 - Heater		
Pin 5 - Heater		
Pin 6 - Pentode Plate		

### PENTODE UNIT — AMPLIFIER — Class A<sub>1</sub>

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

PLATE VOLTAGE . . . . .	30 max.	volts
GRID No.3 (SUPPRESSOR GRID) . . . . .	<i>Connect to cathode at socket</i>	
GRID-No.2 (SCREEN-GRID) VOLTAGE . . . . .	30 max.	volts
CATHODE CURRENT . . . . .	20 max.	ma
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	30 max.	volts
Heater positive with respect to cathode.	30 max.	volts

#### Maximum Circuit Values:

Grid-No.1-Circuit Resistance. . . . .	10 max.	megohms
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### DIODE UNIT

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

PLATE CURRENT . . . . .	5 max.	ma
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#### Characteristics, Instantaneous Test Condition:

Plate Current for plate volts = 5 . . . . .	20	ma
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▲ Without external shield.

