

# Dual Triode—Sharp-Cutoff Pentode

## Dual Triode Has High-Mu Unit & Medium-Mu Unit

### DUODECAR TYPE

#### GENERAL DATA

#### Electrical:

Heater Characteristics and Ratings (*Design-Maximum Values*):

Voltage (AC or DC) . . . . . 6.3 ± 0.6 volts

Current at heater volts = 6.3 . . . . . 1.050 amp

Peak heater-cathode voltage

(Each unit):

Heater negative with respect to cathode . . . . . 200 max. volts

Heater positive with respect to cathode . . . . . 200<sup>a</sup> max. volts

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

#### Triode Unit No. 1:

Grid to plate . . . . . 1.9 pf

Grid to cathode, cathode of triode unit No. 2 & internal shield, pentode cathode & pentode grid No. 3 & internal shield, and heater. . . . . 3.0 pf

Plate to cathode, cathode of triode unit No. 2 & internal shield, pentode cathode & pentode grid No. 3 & internal shield, and heater. . . . . 2.2 pf

#### Triode Unit No. 2:

Grid to plate . . . . . 3.6 pf

Grid to cathode & internal shield, pentode cathode & pentode grid No. 3 & internal shield, and heater. . . . . 2.4 pf

Plate to cathode & internal shield, pentode cathode & pentode grid No. 3 & internal shield, and heater. . . . . 3.8 pf

#### Pentode Unit:

Grid No. 1 to plate . . . . . 0.11 pf

Grid No. 1 to cathode of triode unit No. 2 & internal shield, cathode & grid No. 3 & internal shield, grid No. 2, and heater . . . . . 9.5 pf

Plate to cathode of triode unit No. 2 & internal shield, cathode & grid No. 3 & internal shield, grid No. 2, and heater . . . . . 4.4 pf

Pentode plate to plate of triode unit No. 2 . . . . . 0.044 max. pf

Plate of triode unit No. 1 to plate of triode unit No. 2 . . . . . 0.06 max. pf



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## Characteristics, Class A<sub>1</sub> Amplifier:

### Triode Units

	Unit No.1	Unit No.2	
Plate Supply Voltage. . . . .	200	200	volts
Grid Voltage. . . . .	-2	-	volts
Cathode Resistor. . . . .	-	220	ohms
Amplification Factor. . . . .	68	41	
Plate Resistance (Approx.). . . . .	12400	9400	ohms
Transconductance. . . . .	5500	4400	$\mu$ mhos
Plate Current . . . . .	7	9.2	ma
Grid Voltage (Approx.) for plate $\mu$ a = 10 . . . . .	-5.5	-	volts
Grid Voltage (Approx.) for plate $\mu$ a = 100. . . . .	-	-6.5	volts

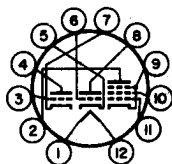
### Pentode Unit

Plate Supply Voltage. . . . .	200	volts
Grid-No.2 Supply Voltage. . . . .	125	volts
Cathode Resistor. . . . .	68	ohms
Plate Resistance (Approx.) . . . . .	70000	ohms
Transconductance. . . . .	10500	$\mu$ mhos
Plate Current . . . . .	24	ma
Grid-No.2 Current . . . . .	5.2	ma
Grid-No.1 Voltage (Approx.) for plate $\mu$ a = 100. . . . .	-8	volts

## Mechanical:

Operating Position. . . . .	Any
Types of Cathodes . . . . .	Coated Unipotential
Maximum Overall Length. . . . .	2.375"
Seated Length . . . . .	1.750" to 2.000"
Diameter. . . . .	1.062" to 1.188"
Bulb. . . . .	T9
Base. . . . .	Small-Button Duodecar 12-Pin (JEDEC No.E12-70)
Basing Designation for BOTTOM VIEW. . . . .	12DP

- Pin 1 - Heater
- Pin 2 - Pentode Plate
- Pin 3 - Grid of  
Triode  
Unit No.2
- Pin 4 - Plate of  
Triode  
Unit No.2
- Pin 5 - Cathode  
of Triode  
Unit No.1
- Pin 6 - Grid of  
Triode  
Unit No.1
- Pin 7 - Cathode  
of Triode  
Unit No.2,  
Internal  
Shield



- Pin 8 - Plate of  
Triode  
Unit No.1
- Pin 9 - Pentode  
Cathode,  
Pentode  
Grid No.3,  
Internal  
Shield
- Pin 10 - Pentode  
Grid No.2
- Pin 11 - Pentode  
Grid No.1
- Pin 12 - Heater

## AMPLIFIER — Class A<sub>1</sub>

### Maximum Ratings, Design-Maximum Values:

#### Triode Units

	Unit No. 1	Unit No. 2	
PLATE VOLTAGE . . . . .	330 max.	330 max.	volts
GRID (CONTROL-GRID) VOLTAGE:			
Positive-bias value . . . . .	0 max.	0 max.	volts
PLATE DISSIPATION . . . . .	1.5 max.	2 max.	watts

#### Pentode Unit

PLATE VOLTAGE . . . . .	330 max.		volts
GRID-No. 2 (SCREEN-GRID) SUPPLY VOLTAGE . . . . .	330 max.		volts
GRID-No. 2 VOLTAGE . . . . .	See <i>Grid-No. 2 Input Rating Chart</i> at front of Receiving Tube Section		
GRID-No. 1 (CONTROL-GRID) VOLTAGE:			
Positive-bias value . . . . .	0 max.		volts
GRID-No. 2 INPUT:			
For grid-No. 2 voltages up to 165 volts. . . . .	1.1 max.		watts
For grid-No. 2 voltages between 165 and 330 volts . . . . .	See <i>Grid-No. 2 Input Rating Chart</i> at front of Receiving Tube Section		
PLATE DISSIPATION . . . . .	5 max.		watts

### Maximum Circuit Values:

#### Values are for Each Unit

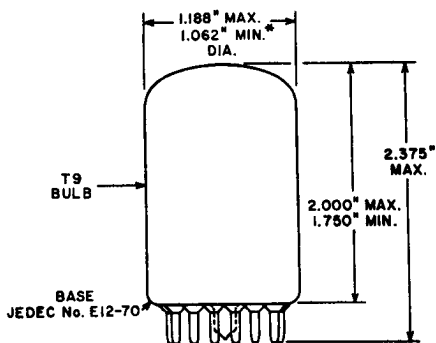
	Triode Units	Pentode Unit	
Grid-No. 1-Circuit Resistance:			
For fixed-bias operation. . . . .	0.5 max.	0.25 max.	megohm
For cathode-bias operation. . . . .	1 max.	1 max.	megohm

<sup>a</sup> The dc component must not exceed 100 volts.

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



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\* APPLIES TO MINIMUM DIAMETER EXCEPT IN AREA OF SEAL.