

## Beam Power Tube

### DUODECAR TYPE

#### Electrical:

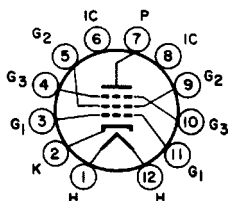
##### Heater Ratings and Characteristics:

Voltage (AC or DC) . . . . .	6.3 ± 0.6	volts
Current at heater volts = 6.3 . . . . .	2.250	amp
Peak heater-cathode voltage:		
Heater negative with respect to cathode . . . . .	200	max. volts
Heater positive with respect to cathode . . . . .	200 <sup>a</sup>	max. volts

#### Mechanical:

Operating Position . . . . .	Any
Type of Cathode . . . . .	Coated Unipotential
Maximum Overall Length . . . . .	3.625"
Seated Length . . . . .	3.000" to 3.250"
Diameter . . . . .	1.437" to 1.563"
Dimensional Outline . . . . .	See <i>General Section</i>
Bulb . . . . .	T12
Base . . . . .	Large-Button Duodecar 12-Pin (JEDEC No. E12-74)
Basing Designation for BOTTOM VIEW . . . . .	12FL

- Pin 1 - Heater
- Pin 2 - Cathode
- Pin 3 - Grid No. 1
- Pin 4 - Grid No. 3
- Pin 5 - Grid No. 2
- Pin 6 - Do Not Use



- Pin 7 - Plate
- Pin 8 - Do Not Use
- Pin 9 - Grid No. 2
- Pin 10 - Grid No. 3
- Pin 11 - Grid No. 1
- Pin 12 - Heater

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

			<i>Triode Connection<sup>b</sup></i>		
Plate Voltage . . . . .	40	60	135	135	volts
Grid-No. 3 Voltage . . . . .	<i>Connected to cathode at socket</i>		0	-	volts
Grid-No. 2 Voltage . . . . .	110	135	135	135	volts
Grid-No. 1 Voltage . . . . .	0	0	-22	-22	volts
Amplification Factor . . . . .	-	-	-	4.2	
Plate Resistance (Approx.) . . . . .	-	-	5000	-	ohms
Transconductance . . . . .	-	-	10000	-	μmhos
Plate Current . . . . .	400 <sup>c</sup>	540 <sup>c</sup>	80	-	ma
Grid-No. 2 Current . . . . .	42 <sup>c</sup>	40 <sup>c</sup>	5.5	-	ma
Grid-No. 1 Voltage (Approx.) for plate ma. = 1, grid-No. 2 volts = 135, plate volts = 4500 . . . . .	-	-	-70	-	volts



## HORIZONTAL-DEFLECTION AMPLIFIER

### Maximum Ratings, Design-Maximum Values:

*For operation in a 525-line, 30-frame system<sup>d</sup>*

DC Plate Supply Voltage . . . . .	770 max.	volts
Peak Positive-Pulse Plate Voltage <sup>e</sup> . . . . .	7000 max.	volts
Peak Negative-Pulse Plate Voltage . . . . .	1500 max.	volts
DC Grid-No.3 (Suppressor-Grid) Voltage <sup>f</sup> . . . . .	70 max.	volts
DC Grid-No.2 (Screen-Grid) Voltage . . . . .	220 max.	volts
Peak Negative-Pulse Grid-No.1 Voltage . . . . .	330 max.	volts
Cathode Current:		
Peak . . . . .	1000 max.	ma
Average . . . . .	280 max.	ma
Grid-No.2 Input . . . . .	6 max.	watts
Grid-No.2 Input (warm-up surge) <sup>g</sup> . . . . .	12 max.	watts
Plate Dissipation <sup>h</sup> . . . . .	24 max.	watts
Bulb Temperature (At hottest point on bulb surface) . . . . .	240 max.	°C

### Maximum Circuit Values:

#### Grid-No.1 Circuit Resistance:

For grid-resistor-bias operation . . . . . 1 max. megohm

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

<sup>b</sup> With grid No.2 connected to plate at socket.

<sup>c</sup> Instantaneous values.

<sup>d</sup> As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

<sup>e</sup> This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

<sup>f</sup> A positive voltage may be applied to grid No.3 to reduce interference from "snivets" which may occur in television receivers. A typical value for this voltage is 30 volts.

<sup>g</sup> Surge not to exceed 15 second duration.

<sup>h</sup> An adequate bias resistor or other means is required to protect the tube in the absence of excitation.