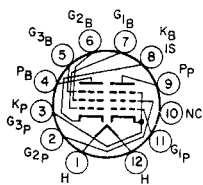


**POWER PENTODE—  
GATED-BEAM  
DISCRIMINATOR**

**6Z10/6J10**  
10Z10, 13Z10/13J10



12BT

Duodecator types used as a combined limiter, discriminator, and audio power-output tube in FM radio and television receivers. Outlines section, 8C; require duodecator 12-contact socket. Types 10Z10, and 13Z10/13J10 are identical with type 6Z10/6J10 except for heater ratings.

	<b>6Z10/6J10</b>	<b>10Z10</b>	<b>13Z10/13J10</b>	
Heater Voltage (ac/dc) .....	6.3	10	13.2	volts
Heater Current .....	0.95	0.6	0.45	ampere
Heater Warm-up Time (Average) .....	—	11	11	seconds
<b>Heater-Cathode Voltage:</b>				
Peak value .....	±200 max	±200 max	±200 max	volts
Average value .....	100 max	100 max	100 max	volts
<b>Direct Interelectrode Capacitances:</b>				
<b>Pentode Unit:</b>				
Grid No.1 to Grid No.3 .....			0.009	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, Plate, and Internal Shield .....			4.4	pF
Grid No.3 to Cathode, Heater, Grid No.1, Grid No.2, Plate, and Internal Shield .....			3.2	pF
<b>Beam Power Unit:</b>				
Grid No.1 to Plate .....			0.22	pF
Grid No.1 to Cathode, Heater, Grid No.2, and Grid No.3 .....			11	pF
Plate to Cathode, Heater, Grid No.2, and Grid No.3 .....			7.5	pF

**Gated-Beam Unit as Limiter and Discriminator**

<b>MAXIMUM RATINGS (Design-Maximum Values)</b>			
Plate Supply Voltage .....		330	volts
Grid-No.2 Voltage .....		330	volts
Grid-No.1 Voltage, Peak positive value .....		60	volts
Average Cathode Current .....		13	mA

**CHARACTERISTICS**

Plate Voltage .....	135	135	135	volts
Grid-No.3 (Suppressor-Grid) Voltage .....	4	4	0	volts
Grid-No.2 (Screen-Grid) Supply Voltage .....	—	280	280	volts
Grid-No.2 Voltage .....	75	—	—	volts
Grid No. 1 (Control-Grid) Voltage .....	0	0	0	volts
Grid-No.2 Resistor .....	—	33	—	kohms
Transconductance, Grid No.1 to Plate .....	—	—	360	μmhos
Transconductance, Grid No.3 to Plate .....	—	—	700	μmhos
Average Plate Current .....	—	5	—	mA
Grid-No.2 Current .....	4.5	—	—	mA
Grid-No.1 Voltage (Approx.) for plate current of 20 μA .....	—	—	—4	volts
Grid-No.3 Voltage (Approx.) for plate current of 20 μA .....	—	—	—4	volts

**Pentode Unit as Class A<sub>1</sub> Amplifier**

<b>MAXIMUM RATINGS (Design-Maximum Values)</b>			
Plate Voltage .....		275	volts
Grid-No.2 (Screen-Grid) Voltage .....		275	volts
Plate Dissipation .....		10	watts
Grid-No.2 Input .....		2	watts

**TYPICAL OPERATION**

Plate Voltage .....		250	volts
Grid-No.2 Voltage .....		250	volts
Grid-No.1 (Control-Grid) Voltage .....		—8	volts
Peak AF Grid-No.1 Voltage .....		8	volts
Zero-Signal Plate Current .....		35	mA
Maximum-Signal Plate Current .....		39	mA
Zero-Signal Grid-No.2 Current .....		3	mA
Maximum-Signal Grid-No.2 Current .....		13	mA
Plate Resistance (Approx.) .....		0.1	megohm
Transconductance .....		6500	μmhos
Load Resistance .....		5000	ohms
Total Harmonic Distortion (Approx.) .....		8.5	per cent
Maximum-Signal Power Output .....		4.2	watts

**MAXIMUM CIRCUIT VALUES**

Grid-No.1-Circuit Resistance:			
For fixed-bias operation .....		0.25	megohm
For cathode-bias operation .....		0.5	megohm

<b>6ZY5G</b>	Refer to chart at end of section.
<b>7A4</b>	Refer to chart at end of section.
<b>7A5</b>	Refer to chart at end of section.
<b>7A6</b>	Refer to chart at end of section.
<b>7A7</b>	Refer to chart at end of section.
<b>7A8</b>	Refer to chart at end of section.
<b>7AD7</b>	Refer to chart at end of section.
<b>7AF7</b>	Refer to chart at end of section.
<b>7AG7</b>	Refer to chart at end of section.
<b>7AH7</b>	Refer to chart at end of section.
<b>7AU7</b>	Refer to type 12AU7A.
<b>7B4</b>	Refer to chart at end of section.
<b>7B5</b>	Refer to chart at end of section.
<b>7B6</b>	Refer to chart at end of section.
<b>7B7</b>	Refer to chart at end of section.
<b>7B8</b>	Refer to chart at end of section.
<b>7C5</b>	Refer to chart at end of section.
<b>7C6</b>	Refer to chart at end of section.
<b>7C7</b>	Refer to chart at end of section.
<b>7DJ8/PCC88</b>	Refer to chart at end of section.
<b>7E6</b>	Refer to chart at end of section.
<b>7E7</b>	Refer to chart at end of section.
<b>7EY6</b>	Refer to chart at end of section.
<b>7F7</b>	Refer to chart at end of section.
<b>7F8</b>	Refer to chart at end of section.
<b>7G7</b>	Refer to chart at end of section.
<b>7GS7</b>	Refer to type 6GS7.