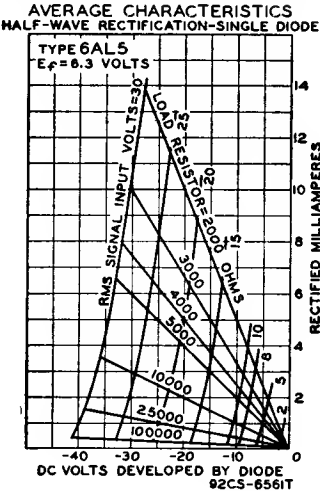


TYPICAL OPERATION

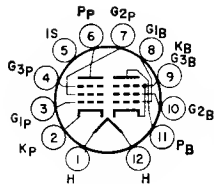
|                                                       |     |
|-------------------------------------------------------|-----|
| AC Plate Voltage per Plate (rms)                      | 117 |
| Min. Total Effective Plate-Supply Impedance per Plate | 300 |
| Average Output Current per Plate                      | 9   |

|       |
|-------|
| volts |
| ohms  |
| mA    |



Refer to chart at end of section.

6AL7GT



12BU

BEAM POWER TUBE—  
SHARP-CUTOFF PENTODE

6AL11

10AL11, 12AL11

Duodecar type used as FM detector and audio-frequency output amplifier in television receivers. Outlines section, 8C; requires duodecar 12-contact socket. Types 10AL11 and 12AL11 are identical with type 6AL11 except for heater ratings.

|                                                                                | 6AL11    | 10AL11   | 12AL11   |         |
|--------------------------------------------------------------------------------|----------|----------|----------|---------|
| Heater Voltage (ac/dc)                                                         | 6.3      | 9.8      | 12.6     | volts   |
| Heater Current                                                                 | 0.9      | 0.6      | 0.45     | ampere  |
| Heater Warm-up Time (Average)                                                  | —        | 11       | 11       | seconds |
| Heater-Cathode Voltage:                                                        |          |          |          |         |
| Peak value                                                                     | ±200 max | ±200 max | ±200 max | volts   |
| Average value                                                                  | 100 max  | 100 max  | 100 max  | volts   |
| Direct Interelectrode Capacitance:                                             |          |          |          |         |
| Beam Power Unit:                                                               |          |          |          |         |
| Grid No.1 to Plate                                                             |          |          | 0.26     | pF      |
| Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield        |          |          | 11       | pF      |
| Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield            |          |          | 12       | pF      |
| Pentode Unit:                                                                  |          |          |          |         |
| Grid No.1 to Plate                                                             |          |          | 0.034    | pF      |
| Grid No.3 to Plate                                                             |          |          | 3.2      | pF      |
| Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield        |          |          | 6.5      | pF      |
| Grid No.3 to Cathode, Heater, Grid No.1, Grid No.2, Plate, and Internal Shield |          |          | 7.5      | pF      |
| Grid No.1 to Grid No.3                                                         |          |          | 0.24     | pF      |
| Pentode Plate to Beam Power Plate                                              |          |          | 0.12     | pF      |

Beam Power Unit as Class A<sub>1</sub> Amplifier

## MAXIMUM RATINGS (Design-Maximum Values)

|                                 |     |       |
|---------------------------------|-----|-------|
| 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    | 2.5  | mA       |
| Maximum-Signal Grid-No.2 Current | 7    | mA       |
| Plate Resistance (Approx.)       | 0.1  | megohm   |
| Transconductance                 | 6500 | μmhos    |
| Load Resistance                  | 5000 | ohms     |
| Total Harmonic Distortion        | 10   | per cent |
| Maximum-Signal Power Output      | 4.2  | watts    |

## MAXIMUM CIRCUIT VALUE

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

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

## CHARACTERISTICS

|                                                        |      |        |
|--------------------------------------------------------|------|--------|
| Plate Supply Voltage                                   | 150  | volts  |
| Grid-No.3 (Suppressor-Grid) Voltage                    | 0    | volts  |
| Grid-No.2 (Screen-Grid) Supply Voltage                 | 100  | volts  |
| Cathode-Bias Resistor                                  | 560  | ohms   |
| Plate Resistance (Approx.)                             | 0.15 | megohm |
| Transconductance, Grid No.1 to Plate                   | 1000 | μmhos  |
| Transconductance, Grid No.3 to Plate                   | 400  | μmhos  |
| Plate Current                                          | 1.3  | mA     |
| Grid-No.2 Current                                      | 2.1  | mA     |
| Grid-No.1 Voltage (Approx.) for plate current of 30 μA | —4.5 | volts  |
| Grid-No.3 Voltage (Approx.) for plate current of 50 μA | —4.5 | volts  |

## Pentode Unit as FM Detector

## MAXIMUM RATINGS (Design-Maximum Values)

|                                                       |                   |       |
|-------------------------------------------------------|-------------------|-------|
| Plate Voltage                                         | 330               | volts |
| Grid-No.3 Voltage                                     | 28                | volts |
| Grid-No.2 Supply Voltage                              | 330               | volts |
| Grid-No.2 Voltage                                     | See curve page 98 |       |
| Grid-No.1 (Control-Grid) Voltage, Positive-bias value | 0                 | volts |
| Plate Dissipation                                     | 1.7               | watts |
| Grid-No.2 Input:                                      |                   |       |
| For grid-No.2 voltages up to 165 volts                | 1.1               | watts |
| For grid-No.2 voltages between 165 and 330 volts      | See curve page 98 |       |

6AM4

Refer to chart at end of section.

6AM8

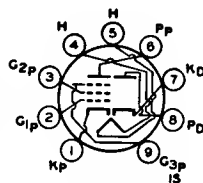
Refer to chart at end of section.

## 6AM8A

5AM8

DIODE—  
SHARP-CUTOFF PENTODE

Miniature type used in television receiver applications. The pentode unit is used as an if amplifier, video amplifier, or agc amplifier. The high-perveance diode is used as an audio detector, video detector, or dc restorer. Outlines section, 6B; requires miniature 9-contact socket. Type 5AM8 is identical with type 6AM8A except for heater ratings.



9CY

|                               |          |           |        |
|-------------------------------|----------|-----------|--------|
| Heater Voltage (ac/dc)        | 5AM8 4.7 | 6AM8A 6.3 | volts  |
| Heater Current                | 0.6      | 0.45      | ampere |
| Heater Warm-up Time (Average) | 100 max  | 100 max   | volts  |