

DESCRIPTION AND RATING

The 6AL5 is a miniature high-perveance twin diode in which separate cathodes are provided for the two sections. The 6AL5 is suited for a wide variety of applications which include service as a detector in FM and television circuits, automatic-gain-control rectifier, or a low-current power rectifier. Each diode can be used independently of the other or combined in parallel or full-wave arrangements. The resonant frequency of each section of the 6AL5 is approximately 700 megacycles.

The 3AL5, 6AL5 and 12AL5 are alike except for heater ratings and heater-cathode voltage ratings. In addition, the 3AL5, as a result of its controlled heater warm-up characteristic, is suited for use in television receivers which employ series-connected heaters. When the 3AL5 is used in conjunction with other 600-milliamper types which exhibit essentially the same heater warm-up characteristic, heater voltage surges across the individual tubes are minimized during the warm-up period.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

| | 3AL5 | 6AL5 | 12AL5 | |
|------------------------------------|------|------|-------|---------|
| Heater Voltage, AC or DC | 3.15 | 6.3 | 12.6 | Volts |
| Heater Current | 0.6 | 0.3 | 0.15 | Amperes |
| Heater Warm-up Time* | 11 | .. | | Seconds |

Direct Interelectrode Capacitances

| | With Shield† | Without Shield |
|---|--------------|------------------------|
| Plate-No. 1 to Cathode-No. 1, Heater, and Internal Shield | 3.2 | 2.5 $\mu\mu\text{f}$ |
| Plate-No. 2 to Cathode-No. 2, Heater, and Internal Shield | 3.2 | 2.5 $\mu\mu\text{f}$ |
| Cathode-No. 1 to Plate-No. 1, Heater, and Internal Shield | 3.6 | 3.4 $\mu\mu\text{f}$ |
| Cathode-No. 2 to Plate-No. 2, Heater, and Internal Shield | 3.6 | 3.4 $\mu\mu\text{f}$ |
| Plate-No. 1 to Plate-No. 2, maximum | 0.026 | 0.068 $\mu\mu\text{f}$ |

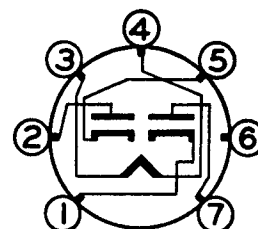
MECHANICAL

Mounting Position—Any

Envelope—T-5½, Glass

Base—E7-1, Miniature Button 7-Pin

BASING DIAGRAM

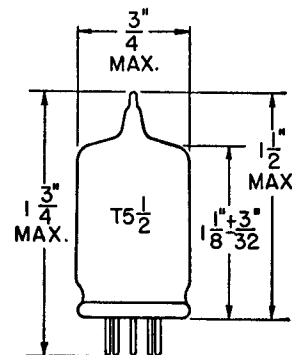


RETMA 6BT

TERMINAL CONNECTIONS

- Pin 1—Cathode (Section 1)
- Pin 2—Plate (Section 2)
- Pin 3—Heater
- Pin 4—Heater
- Pin 5—Cathode (Section 2)
- Pin 6—Internal Shield
- Pin 7—Plate (Section 1)

PHYSICAL DIMENSIONS



RETMA 5-1

MAXIMUM RATINGS

DESIGN-CENTER VALUES

| | | |
|---|-------------|--------------------|
| Peak Inverse Plate Voltage | 330 | Volts |
| AC Plate-Supply Voltage per Plate, RMS | 117 | Volts |
| Steady-State Peak Plate Current per Plate | 54 | Milliamperes |
| DC Output Current per Plate | 9.0 | Milliamperes |
| Heater-Cathode Voltage | 3AL5 | 6AL5, 12AL5 |
| Heater Positive with Respect to Cathode | | |
| DC Component | 100 | ... Volts |
| Total DC and Peak | 200 | 330 Volts |
| Heater Negative with Respect to Cathode | | |
| Total DC and Peak | 200 | 330 Volts |

CHARACTERISTICS AND TYPICAL OPERATION

HALF-WAVE RECTIFIER

| | | |
|---|-----|--------------|
| AC Plate-Supply Voltage per Plate, RMS | 117 | Volts |
| Total Plate-Supply Resistance per Plate | 300 | Ohms |
| DC Output Current per Plate | 9.0 | Milliamperes |
| Tube Voltage Drop | | |
| $I_b = 60$ Milliamperes DC per Plate | 10 | Volts |

* Heater warm-up time is defined as the time required in the circuit shown at the right for the voltage across the heater terminals to increase from zero to the heater test voltage (V_1). For this type, $E = 12.5$ volts (RMS or DC), $V_1 = 2.5$ volts (RMS or DC), and $R = 15.8$ ohms.

† With external shield (RETMA 316) connected to pin 6.

