

### 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 $\mu\mu\text{f}$

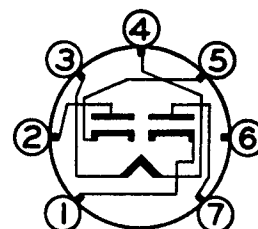
#### MECHANICAL

Mounting Position—Any

Envelope—T-5½, Glass

Base—E7-1, Miniature Button 7-Pin

### BASING DIAGRAM

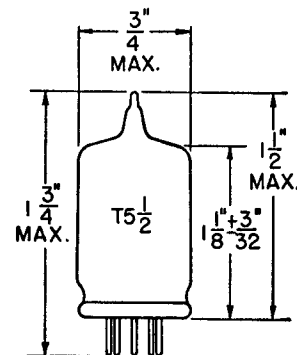


RETMA 6BT

### 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	<b>3AL5</b>	<b>6AL5, 12AL5</b>
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

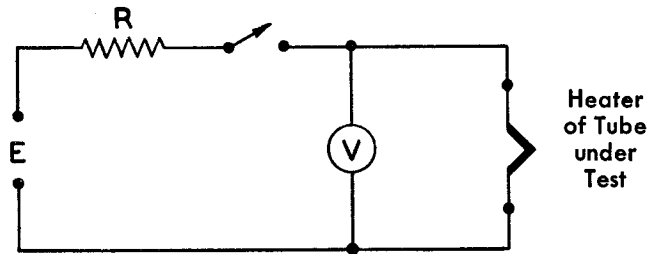
## CHARACTERISTICS AND TYPICAL OPERATION

### 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

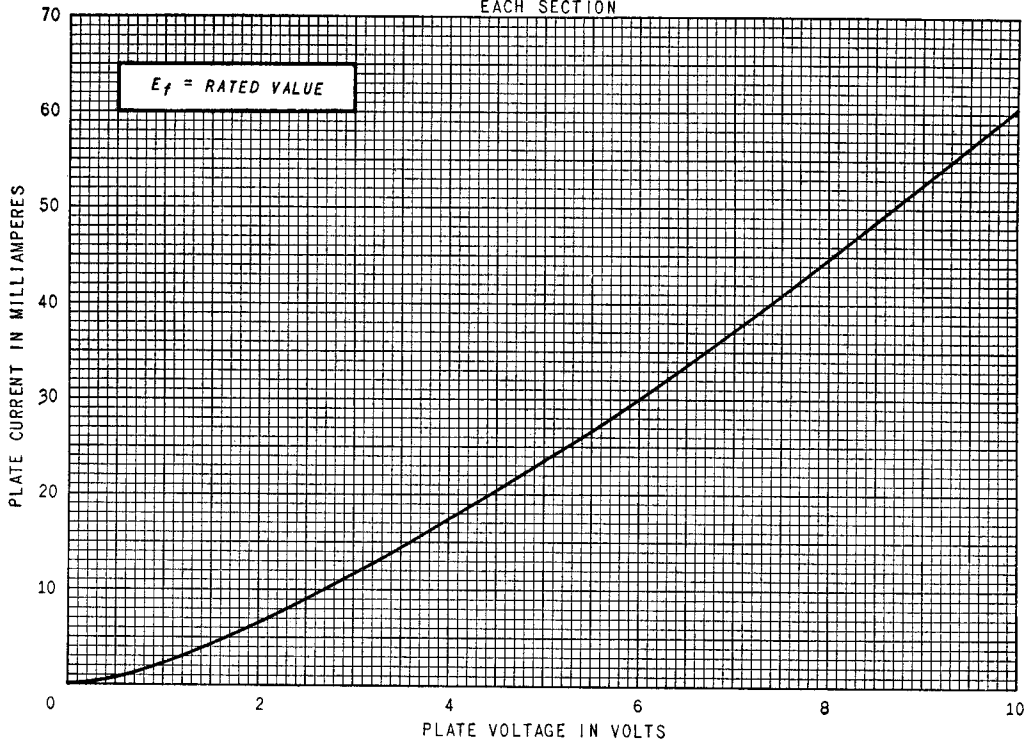
\* Heater warm-up time is defined as the time required in the circuit shown at the right for the voltage across the heater terminals to increase from zero to the heater test voltage ( $V_1$ ). For this type,  $E = 12.5$  volts (RMS or DC),  $V_1 = 2.5$  volts (RMS or DC), and  $R = 15.8$  ohms.

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



### AVERAGE PLATE CHARACTERISTICS

EACH SECTION



### OPERATION CHARACTERISTICS

EACH SECTION

