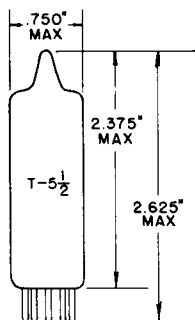


## TUNG-SOL

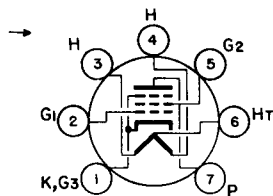
BEAM PENTODE  
MINIATURE TYPE

GLASS BULB  
MINIATURE BUTTON  
7 PIN BASE E7-1  
OUTLINE DRAWING  
JEDEC 5-3

COATED UNIPOTENTIAL CATHODE

FOR AF POWER  
AMPLIFIER APPLICATIONS

ANY MOUNTING POSITION



BOTTOM VIEW  
BASING DIAGRAM  
JEDEC 7F2

THE 50HK6 IS A POWER PENTODE IN THE 7 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED PRIMARILY FOR USE IN THE AUDIO-FREQUENCY POWER OUTPUT STAGE OF RADIO RECEIVERS AND FOR PEAK CURRENT LIMITATION. FEATURES OF THE TUBE INCLUDE HIGH POWER SENSITIVITY AT LOW PLATE AND SCREEN VOLTAGES AND A HEATER TAP TO PERMIT OPERATION OF PANEL LAMP.

## DIRECT INTERELECTRODE CAPACITANCES - APPROX.

WITHOUT EXTERNAL SHIELD

GRID #1 TO PLATE: (G1 TO P)	0.5	pf
INPUT: G1 TO (H+K+G2+G3)	14	pf
OUTPUT: P TO (H+K+G2+G3)	9.0	pf

## HEATER RATINGS AND CHARACTERISTICS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	50 VOLTS	150	MA.
HEATER TAP VOLTAGE <sup>A</sup>		7.0	VOLTS
HEATER SUPPLY LIMITS:			
CURRENT OPERATION		150±10	MA.
MAXIMUM HEATER CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK		200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC		100	VOLTS
TOTAL DC AND PEAK		200	VOLTS

<sup>A</sup>  
WITHOUT PANEL LAMP.

CONTINUED ON FOLLOWING PAGE

→ INDICATES A CHANGE.

## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

HEATER TAP VOLTAGE WHEN PANEL LAMP FAILS, RMS	14	VOLTS
PLATE VOLTAGE	150	VOLTS
GRID #2 VOLTAGE	130	VOLTS
PLATE DISSIPATION	5.5	WATTS
GRID #2 DISSIPATION	1.1	WATTS
GRID #1 CIRCUIT RESISTANCE		
WITH FIXED BIAS	0.1	MEGOHMS
WITH CATHODE BIAS	0.5	MEGOHMS

## TYPICAL OPERATING CHARACTERISTICS

CLASS A<sub>1</sub> AMPLIFIER

PLATE VOLTAGE	110	VOLTS
GRID #2 VOLTAGE	110	VOLTS
GRID #1 VOLTAGE	-7.5	VOLTS
PEAK AF GRID #1 VOLTAGE	7.5	VOLTS
PLATE RESISTANCE, APPROX.	10 000	OHMS
TRANSCONDUCTANCE	7500	μMHOS
ZERO-SIGNAL PLATE CURRENT	49	MA.
MAX.-SIGNAL PLATE CURRENT	50	MA.
ZERO-SIGNAL GRID #2 CURRENT	4.0	MA.
MAX.-SIGNAL GRID #2 CURRENT	8.5	MA.
LOAD RESISTANCE	2500	OHMS
TOTAL HARMONIC DISTORTION, (APPROX.)	9	PERCENT
MAX.-SIGNAL POWER OUTPUT	1.9	WATTS

THE 50HK6 HAS A HEATER TAP, WHICH MAY BE USED FOR OPERATING A 6.3-VOLT, 150-MILLIAMPERE PANEL LAMP IN EQUIPMENT EMPLOYING SEMICONDUCTOR RECTIFIERS. THE TABLE BELOW GIVES THE REQUIRED VALUES OF PANEL-LAMP SHUNTING RESISTOR FOR VARIOUS RECTIFIER LOAD CURRENTS.

## SHUNTING RESISTOR REQUIRED WITH PANEL LAMP NUMBER 40 OR NUMBER 47

SEE TYPICAL CIRCUIT

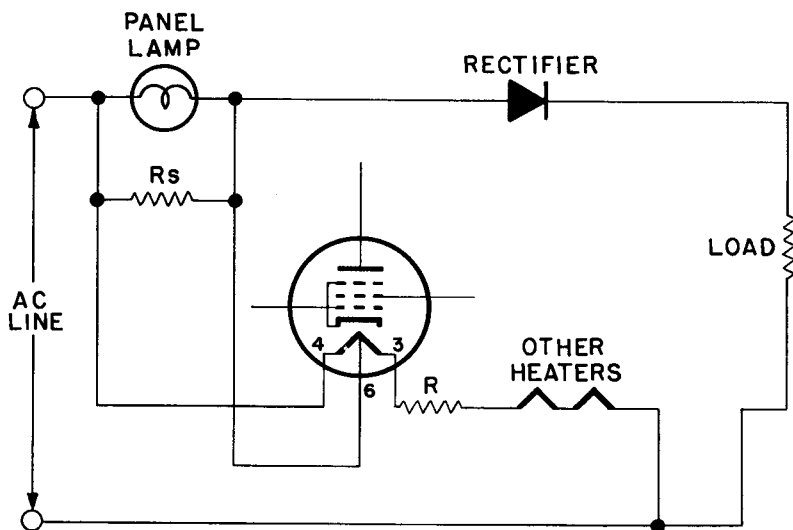
HEATER VOLTAGE								
(PIN 3 TO PIN 4)	45	45	45	45	45	45	45	VOLTS
HEATER-TAP VOLTAGE								
PIN 4 TO PIN 6)	5.0	5.4	5.5	5.5	5.5	5.5	5.5	VOLTS
HEATER CURRENT								
(BETWEEN PINS 3 & 6)	150	150	150	150	150	150	150	MA.
PANEL-LAMP SHUNTING RESISTOR	---	---	370	175	120	88	73	OHMS
RECTIFIER LOAD CURRENT <sup>B</sup>	60	70	80	90	100	110	120	MA.

B

HIGHER LOAD CURRENTS WILL REQUIRE SMALLER VALUES OF PANEL-LAMP SHUNTING RESISTOR. FOR MAXIMUM PANEL-LAMP LIFE, THE SHUNTING RESISTOR SHOULD BE SELECTED TO ALLOW A PANEL-LAMP VOLTAGE OF 5.5 VOLTS WITH FULL RECTIFIER LOAD CURRENT.

CONTINUED ON FOLLOWING PAGE

## TUNG-SOL

TYPICAL CIRCUIT FOR OPERATION  
WITH PANEL LAMP

$R_s$  = PANEL-LAMP SHUNTING RESISTOR  
 DROP ACROSS  $R$  AT 0.15 AMPERE SHOULD EQUAL  
 DIFFERENCE BETWEEN LINE VOLTAGE AND TOTAL  
 OF ALL RATED HEATER VOLTAGES