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.

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

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

A WITHOUT PANEL LAMP.
CONTINUED ON FOLLOWING PAGE

INDICATES A CHANGE.
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 A1 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. 1000 OHMS
TRANSCONDUCTANCE 7500 MHMS
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 MA.
Panel-Lamp Shunting Resistor --- --- 370 175 120 .88 73 OHMS
Rectifier Load CurrentB 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
TYPICAL CIRCUIT FOR OPERATION
WITH PANEL LAMP

\[ R_s = \text{PANEL-LAMP SHUNTING RESISTOR} \]
DROP ACROSS R AT 0.15 AMPERE SHOULD EQUAL
DIFFERENCE BETWEEN LINE VOLTAGE AND TOTAL
OF ALL RATED HEATER VOLTAGES