PENTODE
MINIATURE TYPE

COATED UNIPOTENTIAL CATHODE

HEATER
35±10% VOLTS 0.15 AMP.
AC OR DC
ANY MOUNTING POSITION

BOTTOM VIEW
MINIATURE BUTTON
7 PIN BASE
7FZ

GLASS BULB

THE 35GL6 IS A BEAM PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED PRIMARILY FOR USE IN THE AUDIO-FREQUENCY POWER OUTPUT STAGE OF RADIO RECEIVERS. THE 35GL6 IS TAPPED TO PERMIT OPERATION OF A PANEL LAMP.

DIRECT INTERELECTRODE CAPACITANCES -APPROX.-
WITHOUT EXTERNAL SHIELD

GRID #1 TO PLATE 0.5 μf
INPUT 14 μf
OUTPUT 9.5 μf

RATINGS
INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

HEATER VOLTAGE 35±10% VOLTS
HEATER-TAP VOLTAGE WHEN PANEL LAMP FAILS, RMS 14 VOLTS
MAXIMUM PLATE VOLTAGE 150 VOLTS
MAXIMUM SCREEN VOLTAGE 130 VOLTS
MAXIMUM PLATE DISSIPATION 5.5 WATTS
MAXIMUM SCREEN DISSIPATION 1.1 WATTS
MAXIMUM HEATER CATHODE VOLTAGE:
HEATER POSITIVE WITH RESPECT TO CATHODE 200 VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE 200 VOLTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE:
WITH FIXED BIAS 0.1 MEGOHM
WITH CATHODE BIAS 0.5 MEGOHMS
BULB TEMPERATURE AT HOTTEST POINT 225 °C

DESIGN-MAXIMUM RATINGS ARE THE LIMITING VALUES EXPRESSED WITH RESPECT TO BOGIE TUBES AT WHICH SATISFACTORY TUBE LIFE CAN BE EXPECTED TO OCCUR. TO OBTAIN SATISFACTORY CIRCUIT PERFORMANCE, THEREFORE, THE EQUIPMENT DESIGNER MUST ESTABLISH THE CIRCUIT DESIGN SO THAT NO DESIGN-MAXIMUM VALUE IS EXCEEDED WITH A BOGIE TUBE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, AND ENVIRONMENTAL CONDITIONS.

A1 OPERATION WITHOUT PANEL LAMP.
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS
CLASS A1 AMPLIFIER

HEATER VOLTAGE\(^a\) \hspace{1cm} 35\pm10\% \text{ VOLTS}
HEATER-TAP VOLTAGE\(^a\) \hspace{1cm} 7.0 \text{ VOLTS}
HEATER CURRENT\(^a\) \hspace{1cm} 0.15 \text{ AMP.}
PLATE VOLTAGE \hspace{1cm} 110 \text{ VOLTS}
SCREEN VOLTAGE \hspace{1cm} 110 \text{ VOLTS}
GRID #1 VOLTAGE \hspace{1cm} -7.5 \text{ VOLTS}
PEAK AF GRID #1 VOLTAGE \hspace{1cm} 7.5 \text{ VOLTS}
PLATE RESISTANCE, APPROX. \hspace{1cm} 12,000 \text{ OHMS}
TRANSCONDUCTANCE \hspace{1cm} 7,500 \text{ \(\mu\)MOS}
ZERO-SIGNAL PLATE CURRENT \hspace{1cm} 45 \text{ MA.}
MAXIMUM-SIGNAL PLATE CURRENT \hspace{1cm} 47 \text{ MA.}
ZERO-SIGNAL SCREEN CURRENT \hspace{1cm} 3.0 \text{ MA.}
MAXIMUM-SIGNAL SCREEN CURRENT \hspace{1cm} 9.0 \text{ MA.}
LOAD RESISTANCE \hspace{1cm} 2,500 \text{ OHMS}
TOTAL HARMONIC DISTORTION, APPROX. \hspace{1cm} 8 \text{ PERCENT}
MAXIMUM-SIGNAL POWER OUTPUT \hspace{1cm} 1.8 \text{ WATTS}

THE 35GL6 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 #40 OR #47
(SEE TYPICAL CIRCUIT)

<table>
<thead>
<tr>
<th>HEATER VOLTAGE (PIN 3 TO PIN 4)</th>
<th>32</th>
<th>32</th>
<th>32</th>
<th>32</th>
<th>32</th>
<th>32</th>
<th>VOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEATER-TAP VOLTAGE (PIN 4 TO PIN 6)</td>
<td>5.0</td>
<td>5.4</td>
<td>5.5</td>
<td>5.5</td>
<td>5.5</td>
<td>5.5</td>
<td>VOLTS</td>
</tr>
<tr>
<td>HEATER CURRENT (BETWEEN PINS 3 &amp; 6)</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>MA.</td>
</tr>
<tr>
<td>PANEL-LAMP SHUNTING RESISTOR</td>
<td>---</td>
<td>---</td>
<td>370</td>
<td>175</td>
<td>120</td>
<td>88</td>
<td>73</td>
</tr>
<tr>
<td>RECTIFIER LOAD CURRENT(^b)</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
<td>110</td>
<td>120</td>
</tr>
</tbody>
</table>

\(^b\) 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.

TYPICAL CIRCUIT FOR OPERATION
WITH PANEL LAMP

\(R_s = \text{PANEL-LAMP SHUNTING RESISTOR.}
\)
DROP ACROSS \(R\) AT 0.35 AMPERE SHOULD EQUAL DIFFERENCE BETWEEN LINE VOLTAGE AND TOTAL OF ALL RATED HEATER VOLTAGES.
35GL6

$E_f = 35$ Volts
$E_{c2} = 110$ Volts

Plate Current ($I_b$) - Milliampères

Plate Voltage - Volts

Screen Current ($I_{c2}$) - Milliampères

Plate Voltage - Volts
**35GL6**

\[ E_f = 35 \text{ Volts} \]
\[ E_b = 110 \text{ Volts} \]

**Screen Current - Milliamperes**

**Grid #1 Voltage - Volts**

\[ E_c1 = 120 \]
\[ 110 \]
\[ 100 \]
\[ 80 \]
\[ 60 \]

**Power Output**

\[ E_{\text{Sig}} = 5.3 \text{ Volts (RMS)} \]

**Total Harmonic Distortion - Percent**

**Screen Current**

**Max.-Signal Plate \(i_p\) or Screen \(i_c2\) - Milliamperes**

**Load Resistance - Kilohms**

0 1 2 3 4 5 6

0 2 4 6

0 1.0 2.0 3.0

0 0.5 1.0 2.0

0 5 10 15

TUNG-SOL ELECTRIC INC., ELECTRON TUBE DIVISION, BLOOMFIELD, NEW JERSEY, U.S.A. JULY 1, 1960 PLATE #59314