Beam Power Tube

NOVAR TYPE

ELECTRICAL CHARACTERISTICS — Bogey Values

Heater Voltage, ac or dc ....... \( E_h \) 6.3 V
Heater Current ............... \( I_h \) 2.3 A

Direct Interelectrode Capacitances:^a

<table>
<thead>
<tr>
<th>Capacitance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid No. 1 to plate ( c_{g1-p} )</td>
<td>0.6 pF</td>
</tr>
<tr>
<td>Input: G1 to ((K, G3, G2, H)) ( c_i )</td>
<td>22 pF</td>
</tr>
<tr>
<td>Output: ( P ) to ((K, G3, G2, H)) ( c_o )</td>
<td>11 pF</td>
</tr>
</tbody>
</table>

For the following characteristics, see Conditions below:

Amplification Factor
(Triode Connection)^b \( \mu \) — — 3^c

Plate Resistance
(Approx.) ......... \( r_p \) — — 6000 \( \Omega \)
Transconductance ......... \( g_m \) — — 11000 \( \mu \)mho
DC Plate Current ......... \( I_p \) — — 800d 140 mA
DC Grid-No. 2 Current .... \( I_{c2} \) — — 80d 2.0 mA
Cutoff DC Grid-No. 1
Voltage for \( I_b = 1 \) mA .... \( E_{c1(co)} \) -125 — -50 V

Conditions:
Heater Voltage ......... \( E_h \) ← Bogey Value — V
Peak Positive-Pulse
Plate Voltage^e ......... \( e_{bm} \) 5000 — — V
DC Plate Voltage ......... \( E_b \) — 55 175 V
DC Grid-No. 3 Voltage .... \( E_{c3} \) 30 30 30 V
DC Grid-No. 2 Voltage .... \( E_{c2} \) 130 125 125 V
DC Grid No. 1 Voltage .... \( E_{c1} \) 0 -25 V

MECHANICAL CHARACTERISTICS

Dimensional Outline .................. JEDEC No. 12-117
Envelope .......................... JEDECT12
Top Cap ................................ Small (JEDEC C1-1)
Base ............................ Large-Button Novar 9-Pin with Exhaust Tip (JEDEC E9-88)

Terminal Connections
(See TERMINAL DIAGRAM) .................. JEDEC 9QL
Type of Cathode .................. Coated Unipotential
Operating Position .................. Any

RCA Electronic Components
DATA 1
7-71
MAXIMUM RATINGS — Design-Maximum Values

For operation as a Horizontal-Deflection-Amplifier Tube in a 525 line, 30-frame system

DC Plate Supply Voltage .............. \( E_{bb} \) 990 V
Peak Positive-Pulse Plate Voltage \( e_{bm} \) 7500 V
Peak Negative-Pulse Plate Voltage \( -e_{bm} \) 1100 V
DC Grid-No. 3 Voltage \( e_{c3} \) 75 V
DC Grid-No. 2 (Screen-Grid) Voltage \( e_{c2} \) 220 V
Peak Negative-Pulse Grid-No. 1 (Control-Grid) Voltage \( -e_{clm} \) 330 V
Heater-Cathode Voltage:
Peak \( e_{hk} \) +200 V
Average \( E_{hk} \) 100 V
Heater Voltage: \( E_h \) 5.7 to 6.9 V

Cathode Current:
Peak \( i_{km} \) 1200 mA
Average \( I_{k(avg)} \) 350 mA
Grid-No. 2 Input \( P_{g2} \) 5 W
Plate Dissipation \( P_b \) 30 W
Temporary Overload Plate Dissipation \( P_{b} \) 200 W
Envelope Temperature (at hottest point on envelope surface) \( T_E \) 250 °C

MAXIMUM CIRCUIT VALUES

Grid-No. 1-Circuit Resistance: \( R_{g(ckt)} \) 1.0 megohm
(with min. \( R_K = 100 \ \Omega \))
Grid-leak bias \( 10.0 \) megohms
(with signal peak clamped to zero bias)
Fixed bias \( 0.47 \) megohm
(where positive grid current is not drawn)

a Measured without external shield in accordance with the current issue of EIA Standard RS-191B.
b With grid No. 3 and grid No. 2 connected, respectively, to cathode and plate at socket.
c Conditions: \( E_b = E_{c2} = 125V, E_{c1} = -25V \).
d This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.
e Under pulse-duration condition specified in Footnote g.
f As defined in the current issue of EIA Standard RS-239A.
g This rating is applicable when the duration of the voltage pulse does not exceed 15% of one horizontal scanning cycle. In a 525-line, 30-frame system, 15% of one scanning cycle is 10 μs.

h In horizontal-deflection-amplifier service, a positive voltage should be applied to grid No. 3 to reduce interference from "snivets", which may occur in both vhf and uhf television receivers, and to increase power output. A typical value is 30V.

i An adequate bias resistor or other means is required to protect the tube in the absence of excitation.

k Total continuous or accumulated time not to exceed 40 seconds.

TERMINAL DIAGRAM – JEDEC 9QL (Bottom View)

Pin 1 - Grid No. 2
Pin 2 - Grid No. 1
Pin 3 - Cathode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Grid No. 1
Pin 7 - Grid No. 2
Pin 8 - Grid No. 3
Pin 9 - Do Not Use
Top Cap - Plate
### DIMENSIONAL OUTLINE – JEDEC No. 12-117

![Diagram of 6LZ6 outline](image)

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>INCHES</th>
<th>MILLIMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>A</td>
<td>1.438*</td>
<td>1.562</td>
</tr>
<tr>
<td>C</td>
<td>4.380</td>
<td>4.000</td>
</tr>
<tr>
<td>D</td>
<td>3.750</td>
<td>4.000</td>
</tr>
</tbody>
</table>

**MILLIMETER DIMENSION DERIVED FROM INCH DIMENSION**

*Applies to the minimum diameter except in the area of the seal.*
TYPICAL CHARACTERISTICS

$E_h =$ BOGEY VALUE
GRID-No. 3 VOLTS = 30
GRID-No. 1 VOLTS = 0

$E_{C2} = 150$

GRID-No. 2 VOLTS $E_{C2} = 100$

PLATE MILLIAMPERES ($I_b$)

<table>
<thead>
<tr>
<th>0</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>50</td>
<td>75</td>
<td>125</td>
<td>800</td>
<td>1200</td>
</tr>
</tbody>
</table>

PLATE VOLTS

92CS-17681