TYPE 7499: HIGH SLOPE VIDEO PENTODE

The 7499 is a nine pin all glass construction pentode for use in video amplifier applications.

The use of a special rugged electrode construction manufactured by means of semi-automatic assembly techniques contributes to a low catastrophic failure rate.

The cathode sleeve is made of a special alloy to inhibit the growth of cathode interface resistance during long periods of operation under cut-off conditions and the pure tungsten heater has been designed to withstand frequent heater switching (see note). In addition, the heater-cathode construction and materials ensure very low levels of leakage throughout life.

The glass base and envelope strain patterns are tightly controlled during manufacture to prevent glass failures during life. Special attention is also given to the control of materials and processes to minimise variation of characteristics during life. A particular feature is the very low change in inter-electrode capacitances during life.

Note: A sample from each production lot is tested under the following elevated conditions to assess heater quality: heater voltage 120% of nominal value; heater-cathode voltage 240V r.m.s: applied voltages cycled 1 minute on, 3 minutes off for 100 hours.

MECHANICAL DATA

Coated unipotential cathode.
Outline drawing ............... 6 - 3 Bulb ................. T-61/2
Base ......................... E9-1 Small button ........... 9-pin
Maximum diameter ............... 3/8"
Maximum overall length ........... 2 5/8"
Maximum seated height ........... 2 5/8"
Pin connections ................ Basing .................. 9BA
Pin 1 - Internal connection
Pin 2 - Grid No.1
Pin 3 - Cathode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Internal connection
Pin 7 - Anode
Pin 8 - Grid No. 2
Pin 9 - Grid No. 3

Mounting position ................. any
Maximum shock (intermittent service) .......... 500g

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ELECTRICAL DATA

Interelectrode capacitances. (Measured without external shield)

C\text{a-g1} \quad 0.18 \, \text{pF}

C\text{in} \quad 12.5 \, \text{pF}

C\text{out} \quad 5.0 \, \text{pF}

Heater:

Voltage \, (ac\, or\, dc) \quad 6.3\, \text{volts}

Current \quad 0.75\, \text{amps.}

Ratings - Absolute maximum values.

Maximum heater voltage variation \quad \pm 5\% \, \text{of nominal value.}

Maximum cathode current \quad 65\, \text{mA}

Maximum anode voltage \, (I_a=0) \quad 500\, \text{volts}

Maximum anode voltage \quad 300\, \text{volts}

Maximum anode dissipation \quad 12\, \text{watts}

Maximum screen voltage \, (I_g2=0) \quad 500\, \text{volts}

Maximum screen voltage \quad 300\, \text{volts}

Maximum screen dissipation \quad 2.5\, \text{watts}

Maximum bulb temperature (at hottest spot on bulb surface) \quad 250°C

RANGE OF CHARACTERISTIC VALUES FOR EQUIPMENT DESIGN (At Zero hours)

Test conditions \ldots \, V_a = 250V, V_{g3} = 0, V_{g2} = 250V, V_{g1} = -4.5V

\begin{tabular}{lccc}
& Min. & Bogey & Max. \\
Anode current & 30 & 40 & 50 \, \text{mA} \\
Screen current & - & 6.0 & 7.5 \, \text{mA} \\
Mutual conductance & 9.0 & 11.0 & 13.5 \, \text{mA/V} \\
Anode current at \, V_{g1} = -25V & 20 & 26 & 32 \, \text{µA} \\
Inner amplification factor & & & \\
\end{tabular}

Maximum value of cathode interface resistance throughout life \, 10Ω.