SONOTONE CORPORATION

JETEC Registration Data

GENERAL DESCRIPTION

The Type 6224 is a beam power pentode designed for applications where reliable performance under conditions of extreme vibration and shock is essential. The design features include close tolerance on filament current and delta power output/Ei, together with close control on vibration output as indicated by peak to peak readings.

MECHANICAL DATA

GENERAL

Style ........................................... subminiature
Cathode ....................................... coated unipotential
Bulb ........................................... T-3
Base ........................................... Subminiature Button
Flexible Leads

Basing Connections:

Lead 1—grid 1
Lead 2—cathode, grid 3
Lead 3—heater
Lead 4—cathode, grid 3
Lead 5—plate
Lead 6—heater
Lead 7—grid 2
Lead 8—cathode, grid 3

Ratings

Maximum Impact Acceleration(1) .......... 450 g
Maximum Vibrational Acceleration
for Extended Periods(2) ......................... 2.5 g
Maximum Bulb Temperature (Measured
at hottest point on bulb) ....................... 220° C

GEAR DATA

GENERAL

Heater Voltage (ac or dc) .................... 6.3 volts
Heater Current ................................ 450 ma
Life Expectancy:
220°C: Ambient Temperature(3) ............ 1000 hours
Heater Cycle Life(4) ......................... 2500 cycles
Direct Interelectrode Capacitances:

With External Shield
Grid to Plate ................................... 0.2 uuf
Input ........................................... 6.5 uuf
Output ......................................... 7.5 uuf

RATINGS—Absolute Values

Heater Voltage ................................ 6.3 (±5%) volts
Maximum Plate Voltage (dc) .................. 165 volts
Maximum Plate Dissipation .................... 5.0 watts
Maximum Plate Current ......................... 30 ma
Maximum Grid-No. 2 Voltage .................. 155 volts
Maximum Grid-No. 2 Input ..................... 0.6 watts
Maximum Negative Grid Voltage .............. 55 volts
Maximum Heater-Cathode Voltage .......... ±200 volts

CHARACTERISTICS

Heater Voltage ................................ 6.3 volts
Plate Voltage (dc) ............................ 110 volts
Grid-No. 2 Voltage (dc) ....................... 110 volts
Cathode Resistor ................................ 270 ohms
Plate Current .................................. 30.0 ma
Grid-No. 2 Current ......................... 2.0 ma
Plate Resistance ................................ 10,000 ohms
Transconductance .............................. 4200 umhos
Plate Current (<40 volts) ...................... 100 umsps
Noise Output Voltage,
maximum (peak to peak) ...................... 100 mv
Mechanical ................................... as per MIL-E-1/17751A

*Having inside diameter of 0.405” and connected to cathode.

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NOTES

(1) Tubes are held rigid in three different positions in a Navy Type, High Impact Shock Machine and subjected to 450 g impact acceleration. Hammer angle = 30°.

(2) Tubes are rigidly mounted and subjected in each of three positions to 2.5 g vibrational acceleration at 25 cycles per second for 32 hours.

(3) Life test is made with a heater voltage of 6.3 volts, plate supply voltage of 110 volts, grid-No. 2 supply voltage of 110 volts, dc heater-cathode voltage (heater positive with respect to cathode) of 200 volts, cathode resistor of 270 ohms and a grid-No. 1 resistor of 0.47 megohm. Life test end points: △ power output/t, 25% maximum; heater-cathode leakage current, 90 microamperes maximum; grid-No. 1 current, —3.0 microamperes maximum.

(4) Under the following conditions: heater voltage of 7.5 volts cycled 1 minute on and 4 minutes off; heater-cathode voltage of 140 volts (rms); plate and grid voltages = 0.

(5) Under the following conditions: a 110-volt plate voltage supply having an impedance not exceeding that of a 40-uf capacitor, plate load resistance of 10,000 ohms, cathode resistor of 270 ohms, cathode bypass capacitor of 1000 microfarads and vibrational acceleration of 15 g at 40 cps. Free free bar vibrator.