SONOTONE CORPORATION

JETEC Registration Data

TYPE 6221 TRIODE

The Type 6221 is a medium-mu triode designed for application where reliable performance under conditions of extreme vibration and shock is essential. The design features include close tolerance on filament current and delta transconductance/Ef, together with resistance to vibration frequencies up to 2000 cycles 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:	Outline 8-1 Maximum Diameter 0.400 inch Maximum Overall Bulb Length 1.375 inches Minimum Lead Length 1.500 inches Mounting Position any Ratings
Lead 1—grid Lead 2—no connection (do not use) Lead 3—heater Lead 4—plate Lead 5—cathode Lead 6—heater Lead 7—no connection (do not use) Lead 8—plate	Maximum Impact Acceleration (1) 600 g Maximum Vibrational Acceleration for Extended Periods (2) 2.5 g Maximum Bulb Temperature (measured at hottest point on bulb) 220° C

ELECTRICAL DATA

GENERAL

Heater Voltage (ac or dc) 6.3 volts Heater Current 175 ma	Maximum Heater-Cathode Voltage ± 200 volts
	CHARACTERISTICS
Life Expectancy:	Heater Voltage 6.3 volts
220° C Ambient Temperature (3) 1000 hours	Plate Voltage (dc) 100 volts
Heater Cycle Life(4) 2500 cycles	Cathode Resistor 150 ohms
Direct Interelectrode Capacitances:	Plate Current 8.5 ma
Unshielded	Amplification Factor
Grid to Plate 1.8 uuf	Transconductance
Input 2.2 uuf	Grid Voltage for 10 ua
Output 0.9 uuf	Plate Current
RATINGS—Absolute Values	Noise Output Voltage 1,
Heater Voltage 6.3(±5%) volts	maximum (peak to peak) (5) 25 mv
Maximum Plate Voltage (dc) 165 volts	Noise Output Voltage 2,
Maximum Plate Dissipation	maximum (peak to peak) (6) 50 mv
Maximum Plate Current	Noise Output Voltage 3,
Maximum Grid Current	maximum (peak to peak) (7) 100 mv
Maximum Negative Grid	Operation Time(8) 20 seconds
Voltage 55 volts	Mechanical as per MIL-E-17751A

NOTES

- Tubes are held rigid in three different positions in a Navy Type, High Impact (flyweight) Shock Machine and subjected to 600 g impact acceleration. Hammer angle=42°.
- (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 100 volts, dc heater-cathode voltage (heater positive with respect to cathode) of 200 volts, cathode resistor of 150 ohms and a grid-No. 1 resistor of 1 megohm. Life test end points: △ transconductance/t, 20% maximum; heater-cathode leakage current, 15 microamperes maximum; grid-No. 1 current, —.8 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: plate voltage supply of 100 volts with an impedance not exceeding that of a 40-uf capacitor, plate load re-

- sistor of 10000 ohms, cathode resistor of 150 ohms, cathode bypass capacitor of 1000 uf, vibrational acceleration of 15 g at 40 cycles per second. Free free bar vibrator.
- (6) Under the following conditions: A 100-volt plate voltage supply having an impedance not exceeding that of a 40-uf capacitor, plate load resistor of 10000 ohms, cathode resistor of 150 ohms, cathode bypass capacitor of 1000 microfarads, and vibrational acceleration of 15 g, with sweep frequency of 20 to 500 cycles per second.
- (7) Under the following conditions: A 100-volt plate voltage supply having an impedance not exceeding that of a 40-uf capacitor, plate load resistor of 10000 ohms, cathode resistor of 150 ohms, cathode bypass capacitor of 1000 microfarads, and vibrational acceleration of 10 g, with sweep frequency of 500 to 2000 cycles per second.
- (8) Operation Time is the time in seconds required for the plate current to attain a value of 95% ±5% of the three minute plate current value when measured under average operating conditions.

SONOTONE CORPORATION

ELMSFORD, NEW YORK