DATA FOR E.I.A. REGISTRATION

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The 7438 is a reliable subminiature short suppressor base pentode for use in guided weapons.

PHYSICAL SPECIFICATIONS

Base

Bulb
Maximum bulb length
1.5" (38.1mm)
Maximum bulb diameter
0.4" (10.16mm)
Minimum lead length
1.5" (38.1mm)

BASING DIAGRAM

BASING CONNECTIONS

Lead No.1 Grid No.1
No.2 Grid No.3
No.3 Heater
No.4 Grid No.3
No.5 Plate
No.6 Heater
No.7 Grid No.2
No.8 Cathode

MECHANICAL RATINGS

Maximum shock (short duration) 500 g
*Maximum vibration (100hrs.max.duration) 5 g
(10 minutes max.duration) 20 g
Maximum operating altitude 60,000 ft.
Maximum bulb temperature 165 °C
Ambient storage temperature range -60 to +85 °C

*This rating assumes that the vibration frequency components are varying continuously over the band 10 to 1000 c/s in a random manner.

GENERAL ELECTRICAL DATA

Heater voltage 6.3 V
Heater current 175 mA

ELECTRODE CAPACITANCES (measured with external shield)

Plate to grid No.1 <0.015 pF
Plate to grid No.3 <3.0 pF
Grid No.3 to all electrodes 6.5 pF
Input 4.2 pF
Output 3.1 pF
MAXIMUM RATINGS (absolute values)

- Plate supply voltage: 350 V
- Plate voltage: 190 V
- Plate dissipation: 1.0 W
- Grid No. 3 voltage (negative): 100 V
- Grid No. 3 voltage (positive): 0 V
- Grid No. 2 supply voltage: 350 V
- Grid No. 2 voltage: 190 V
- Grid No. 2 dissipation: 400 mW
- Grid No. 1 voltage (negative): 50 V
- Cathode current: 12 mA
- Heater-cathode voltage: 100 V
- Grid No. 1 circuit resistance (fixed bias): 100 kΩ
- Grid No. 1 circuit resistance (self bias): 500 kΩ

CHARACTERISTICS

- Plate voltage: 100 V
- Grid No. 3 voltage: 0 V
- Grid No. 2 voltage: 100 V
- Plate current: 3.0 mA
- Grid No. 2 current: 2.25 mA
- Transconductance (Grid No. 1): 2500 micromhos
- Transconductance (Grid No. 3): 350 micromhos
- Amplification factor (μgl-g2): 34
- Grid No. 1, voltage: -2.0 V

*Measured with a grid No. 3 bias of -2.0V.

†Maximum noise output voltage: 200 mV (r.m.s.)

†Measured across a plate resistor of 22kΩ with applied vibrational acceleration of 20g in the frequency range 60 to 1000 c/s.