

DATA FOR E.I.A. REGISTRATION

TUBE TYPE 7438

from JEDEC release
#2392, Feb. 23, 1959

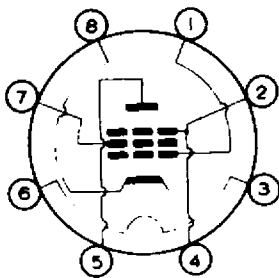
MULLARD LIMITED
Mullard House,
Torrington Place,
LONDON.W.C.1.

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

PHYSICAL SPECIFICATIONS

| | |
|-----------------------|---|
| Base | 8 lead subminiature with flying leads (B8D/F) |
| Bulb | Glass T-3 |
| Maximum bulb length | 1.5" (38.1mm) |
| Maximum bulb diameter | 0.4" (10.16mm) |
| Minimum lead length | 1.5" (38.1mm) |

BASING DIAGRAM



8JZ

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 | -60to+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 |
| (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 k Ω |
| (self bias) | 500 k Ω |

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 (μ_{gl-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 22k Ω with applied vibrational acceleration of 20g in the frequency range 60 to 1000 c/s.