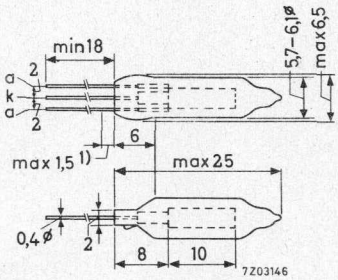
# SWITCHING AND LIGHT DIODE

Long-life cold-cathode neon-filled subminiature switching and light diode with a large and stable difference between ignition and maintaining voltage intended for touch control applications e.g. in variable capacitance diode controlled radio or television tuners. The tube is shock and vibration resistant.

| QUICK REFERENCE DATA | | | |
|---|---|---|---|
| Ignition voltage | $V_{ign}$ | 172 | V |
| Maintaining voltage | $V_m$ | 107 | V |
| Cathode current | $I_k$ | 3 | mA |

**DIMENSIONS AND CONNECTIONS** Dimensions in mm




**MOUNTING**

The tube may be soldered directly into the circuit, but heat conducted to the glass to metal seals should be kept to a minimum by using a thermal shunt. The leads may be dip-soldered to a minimum of 5 mm from the seals at a solder temperature of 240 °C during max. 10 s. Care should be taken not to bend the leads closer than 1,5 mm to the seals.

1) This part of the leads is not tinned.

## CHARACTERISTICS AND OPERATING CONDITIONS

Valid over life and full temperature range unless otherwise stated.
The electrical characteristics are independent of ambient illumination.

### Non conduction

| | | | | |
|---|---|---|---|---|
| Anode voltage below which ignition will not occur | $V_{ign_{min.}}$ | | 161 | V |
| Insulation resistance | $r_{ins}$ | > | 300 | MΩ |

### Ignition

| | | | | |
|---|---|---|---|---|
| Anode voltage to ensure ignition | $V_{ign_{max.}}$ | | 183 | V |
| Ignition delay at $V_{ign}$ + 10 V | $T_{delay}$ | < | 50 | ms |
| at $V_{ign}$ + 20 V | $T_{delay}$ | < | 20 | ms |
| Typical max. individual variation of ignition voltage during life, within the $V_{ign}$ limits given above | $\Delta V_{ign}$ | < | 5 | V |

### Conduction

| | | | | |
|---|---|---|---|---|
| Cathode current, average during any conduction period | $I_k$ | > | 2, 2 | mA |
| average ($T_{av}$ = max. 1 s) | $I_k$ | < | 4, 5 | mA |
| Maintaining voltage at $I_k$ = 3 mA | $V_m$ | ≥ | 103 | V |
| | | ≤ | 111 | V |
| Typical max. individual variation of maintaining voltage during life, within the $V_m$ limits given above | $\Delta V_m$ | < | +2 | V |
| | | | −4 | V |

### Extinction

| | | | | |
|---|---|---|---|---|
| Extinction voltage | $V_{ext}$ | > | 100 | V |

**LIMITING VALUES** (Absolute max. rating system)

| | | | | |
|---|---|---|---|---|
| Cathode current, average for | | | | |
| continuous conduction | $I_k$ | min. | 2,2 | mA |
| average ($T_{av}$ = max. 1 s) | $I_k$ | max. | 4,5 | mA |
| Anode voltage, negative peak | $-V_{ap}$ | max. | 200 | V |
| Bulb temperature | $t_{bulb}$ | min. | -55 | °C |
| | | max. | +70 | °C |

**SHOCK AND VIBRATION RESISTANCE**

These conditions are solely used to assess the mechanical quality of the tube. The tube must not be continuously operated under these conditions.

Shock resistance 500 g

Forces as applied by NRL impact machine for electronic devices caused by 5 blows of the hammer lifted over an angle of 30° in each of 4 positions of the tube.

Vibration resistance 2,5 $g_{(peak)}$

Vibrational forces for a period of 32 hours at a frequency of 50 Hz in each of 3 directions.