

## VOLTAGE INDICATOR

# EM87

Short grid-base electron beam tube for use as a voltage indicator in tape recorders. The pattern consists of a vertical column with a fluorescent area at the top and bottom. As the grid is driven negative these fluorescent areas converge, until they meet at  $V_g = -10V$ . At  $V_g = -15V$  there is a 1.5mm cross-over which can be utilised to indicate overloading.

### HEATER

|       |     |    |
|-------|-----|----|
| $V_h$ | 6.3 | V  |
| $I_h$ | 300 | mA |

### TYPICAL OPERATING CONDITIONS

(deflection electrode connected to anode)

|           |                       |            |
|-----------|-----------------------|------------|
| $V_b$     | 250                   | V          |
| $V_t$     | 250                   | V          |
| $R_a$     | 100                   | k $\Omega$ |
| $R_{g-k}$ | 3.0                   | M $\Omega$ |
| $V_g$     | 0      -10      -15   | V          |
| $I_a$     | 2.0      0.5      0.2 | mA         |
| $I_t$     | 1.0      1.8      2.0 | mA         |
| *L        | 21      0      -1.5   | mm         |

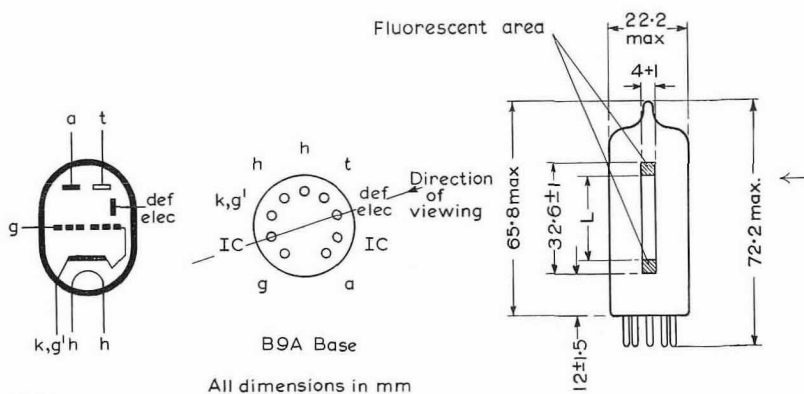
\*Length of column. A negative value of L indicates overlapping.

### DESIGN CENTRE RATINGS

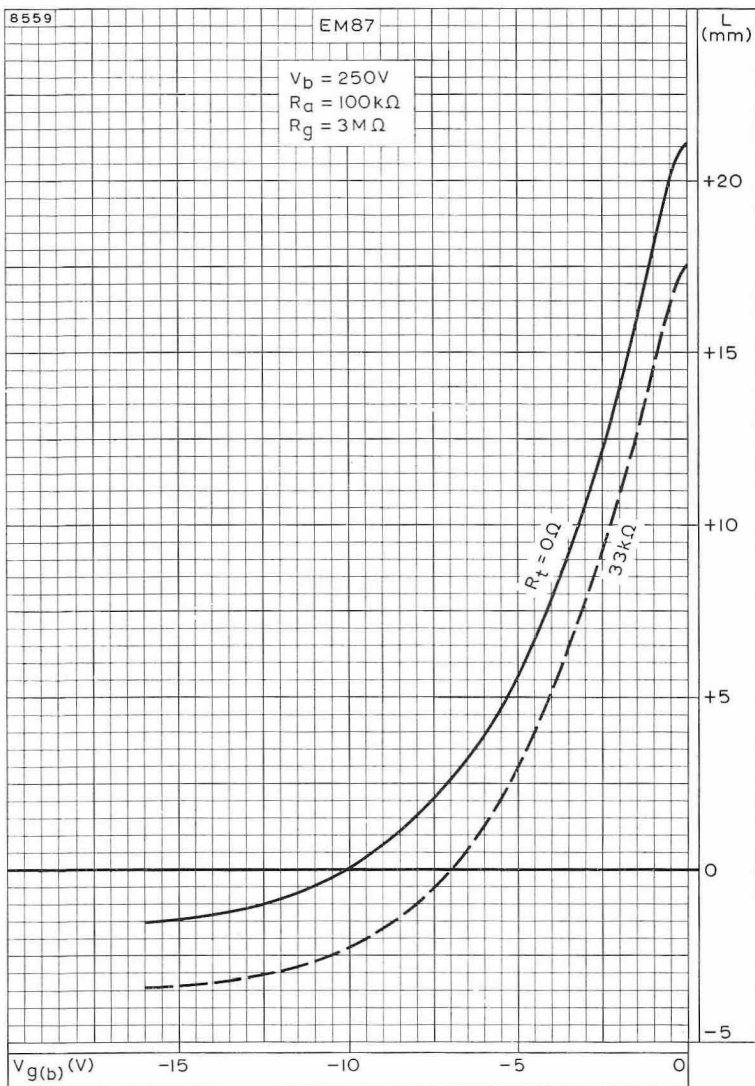
|                                        |     |                    |
|----------------------------------------|-----|--------------------|
| $V_{a(b)} \text{ max.}$                | 550 | V                  |
| $V_a \text{ max.}$                     | 300 | V                  |
| $P_a \text{ max.}$                     | 600 | mW                 |
| $V_{\text{def.elec.}(b)} \text{ max.}$ | 550 | V                  |
| $V_{\text{def.elec.}} \text{ max.}$    | 300 | V                  |
| $V_{t(b)} \text{ max.}$                | 550 | V                  |
| $V_t \text{ max.}$                     | 300 | V                  |
| $V_t \text{ min.}$                     | 170 | V                  |
| $I_k \text{ max.}$                     | 5.0 | mA                 |
| $R_{g-k} \text{ max.}$                 | 3.0 | M $\Omega$         |
| $R_{h-k} \text{ max.}$                 | 100 | k $\Omega$         |
| $V_{h-k} \text{ max.}$                 | 250 | V                  |
| $T_{\text{bulb}} \text{ max.}$         | 120 | $^{\circ}\text{C}$ |

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9669



LENGTH OF COLUMN PLOTTED AGAINST CONTROL-GRID VOLTAGE

