

## 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

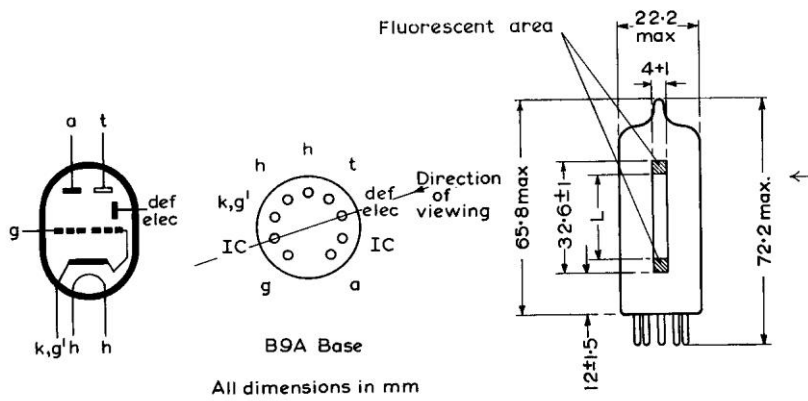
\*Length of column. A negative value of L indicates overlapping.

### DESIGN CENTRE RATINGS

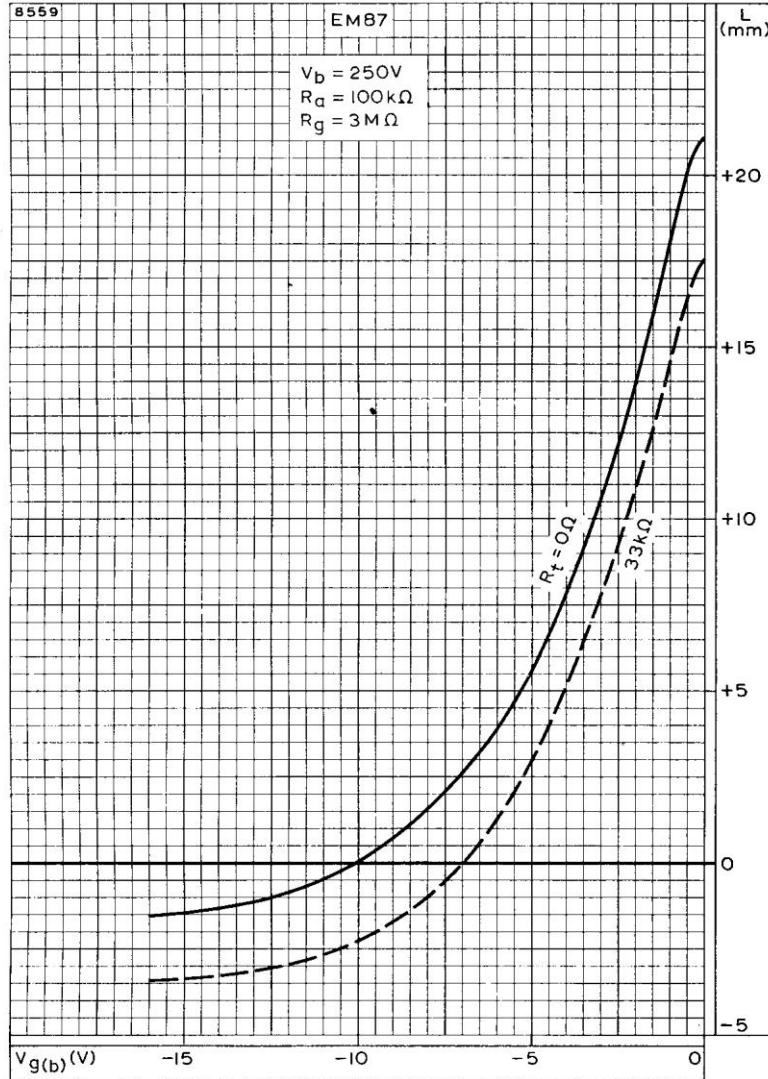
$V_{a(b)} \text{ max.}$	550	V
$V_a \text{ max.}$	300	V
$p_a \text{ max.}$	600	mW
$V_{\text{def.elec.(b)}} \text{ max.}$	550	V
$V_{\text{def.elec.}} \text{ max.}$	300	V
$V_{t(b)} \text{ max.}$	550	V
$V_t \text{ max.}$	300	V
$V_t \text{ min.}$	170	V
$I_k \text{ max.}$	5.0	mA
$R_{g-k} \text{ max.}$	3.0	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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LENGTH OF COLUMN PLOTTED AGAINST CONTROL-GRID VOLTAGE