FERRANTI

VOLTAGE STABILISERS

KD60

KD61

Small sized neon filled Cold-cathode Diodes, designed to fulfil the requirement of a high order of stability of running voltage at low currents. The valves are constructed in such a manner that they can also be used as visual indicators.

PHYSICAL DETAILS.

	KD60	KD61
Base	None	Flexible leads.
Max. Overall Length ...	51	44 mm.
Max. Width	23	19·5 mm.
Max. Dia. of glass envelope	12·5	12·5 mm.
End Caps	Skirted Miniature	—

The anode is indicated by a red band.

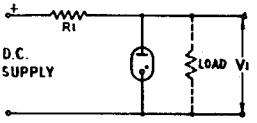
RATINGS.

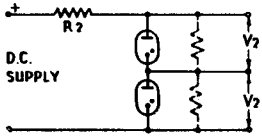
Max. Ignition Voltage (DC) ...	85 volts.
Max. Operating Current ...	2·5 mA.
Min. Current to maintain Ionisation	20 μA.

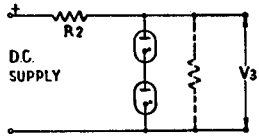
CHARACTERISTICS.

Max. Voltage Drop across tube over operating range ...	64 volts.
Min. Voltage Drop across tube over operating range	60 volts.
†Regulation 1·0 mA to 1·2 mA	±0·15 volts.
0·5 mA to 1·0 mA	± 0·2 volts.
125 μA to 2·5 mA	± 0·4 volts.
*Min. operating current	125 μA.
Preferred operating current ...	1·0 mA.

TYPICAL OPERATION.







DC Supply	...	300 V.
I_L	... ...	1 mA.
V1	... ...	62 B.
V2	... ...	62 V.
V3	... ...	124 V.
R1	... ...	100 kΩ
R2	... ...	56 kΩ

For other operating conditions refer to chart overleaf.

†The initial drift is very small but for maximum stability the valve should be given a preliminary run of 15 minutes.

*At current below 125 μA the potential drop across the tube rises.

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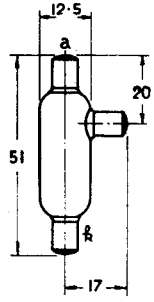
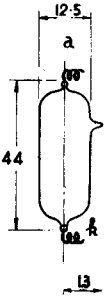


KD 61



All Dimensions shown are in Millimetres (max.)

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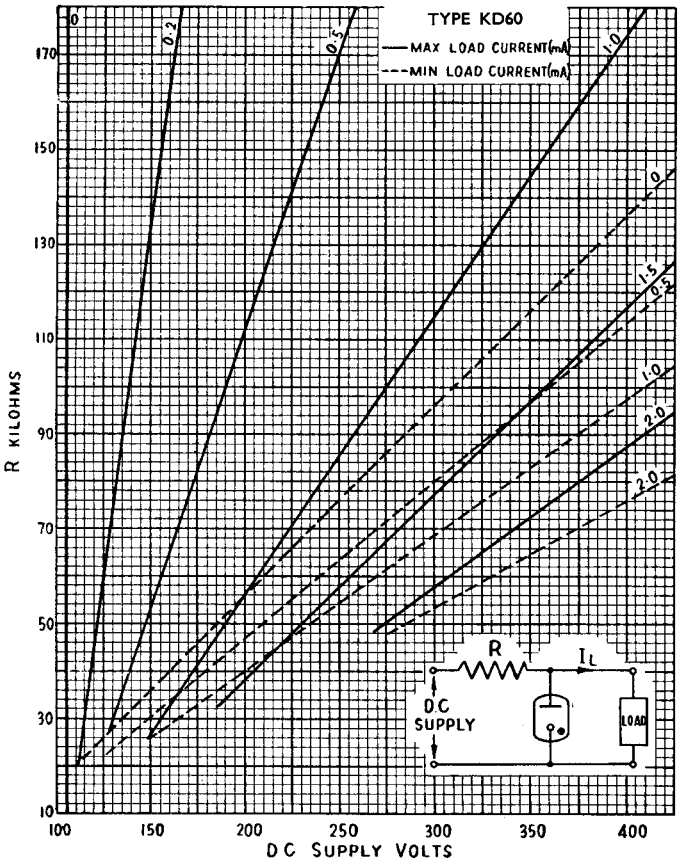

This graph facilitates the determination of the permissible values of supply voltage and series resistance for operation with various loads permanently connected in parallel with the Stabiliser Valve.

On this graph Load current (I_L) refers to the DC. current flowing through the load at 62v.

The operating point of the valves must lie—

(a) below and to the right of the full line corresponding to the maximum load current.

(b) above and to the left of the dotted line corresponding to the minimum load current.

To determine the value of series resistor required in applications which employ several valves in series in order to get a higher stabilised voltage (e.g., R_2 overleaf) the method is as follows :—

For a circuit employing n valves in series the value of Series Resistor (Rs) is determined from the formula

$$R_s = R \times n$$

R is the value of resistor on the graph appropriate to a supply Voltage $\frac{V}{n}$ when V is the actual supply Voltage.

The largest convenient value of Resistor should be employed to obtain the best stability and longest life.

Due allowance should be made for the tolerance of the resistor and variation of the DC. supply voltage.

If the load is removed, or its resistance increased at the instant of switching on the supply voltage, much lower supply voltages and higher load currents may be employed.