Miniature Cold-Cathode Voltage-Stabiliser

Code: G55/1K

The G55/1K is a miniature cold-cathode, gas-filled, voltage-stabiliser for use in industrial and radio equipment where a stable source of voltage is required. The noteworthy feature of this valve is the relatively low maintaining voltage of 55 volts.

MECHANICAL DATA

Maximum overall length	66.7	mm
Maximum seated height	60.3	mm
Maximum diameter	19.1	mm
Base	B7G	
Net weight	8.5	g
Mounting position	Unrestricted←	

CHARACTERISTICS

Maximum striking voltage	90	V←
Maximum stabilising voltage at 30 mA	60	V←
Minimum stabilising voltage at 2 mA	50	V←
Nominal stabilising voltage	55	V←
D.C. operating current	2 to 30	mA
Maximum peak current (10 seconds max.)	75	mA
Nominal regulation, 2 to 30 mA	3	V
Maximum regulation, 2 to 30 mA	5	V
Nominal drift in stabilising voltage (100 to 1000 hours)	+1.25	V←
Temperature coefficient, − 20 to + 90°C	12	mV/°C←
Ambient temperature range	−55 to +90	°C

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OPERATING NOTES

This valve is designed and manufactured for use as a stabiliser, to provide a constant voltage source independent of supply and load current variations. As such it has a wide current range and low impedance. In cases where the requirements are not too severe, it may also be used to provide a voltage reference source, particularly if steps are taken to maintain constant the current and operating conditions and to age-in the valve under operational conditions.

Sufficient resistance should always be used in series with the stabiliser to limit the current through it to the specified operating range, taking into account fluctuations due to component tolerances, extremes of supply voltage and load current. The minimum supply voltage should always exceed the rated maximum striking voltage to ensure striking initially and during life.

A peak starting current in excess of the maximum D.C. operating current, as indicated by the valve ratings, is permissible, after which several minutes operation at normal current may be required before the stabilising voltage again reaches its normal value. In view of this general characteristic of voltage stabilisers current variations should be limited to a low value in circuits where a high degree of stability is required, as in the case, for example, where the valve is used as a voltage reference source.

If the valve has been operated consistently at a given D.C. current, a change in this current value may bring about some initial drift in the stabiliser characteristics. A similar drift may be experienced with a new valve, since the particular operating conditions will probably differ from those applied during manufacture. For those applications in which such a drift is particularly objectionable, it may be desirable to operate the stabiliser at the proposed current level for up to 100 hours before using it in circuit.

To stabilise high voltage supplies, two or more stabilisers may be operated in series across the supply, all but one valve being shunted by a high resistance to aid striking.

If the associated circuit has a capacitor in shunt with the stabiliser, it should be limited to 0.1uF, as a larger value may cause oscillation and thus give unstable regulation.

Operation with reversed polarity will damage this valve.

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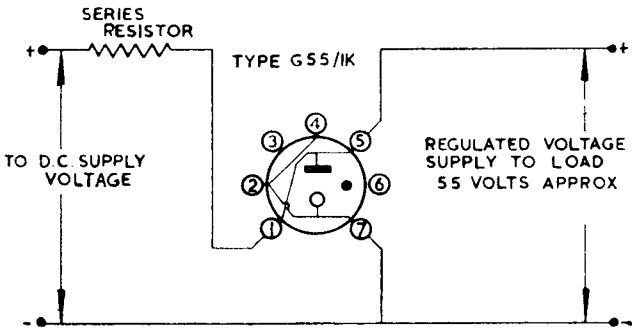

TYPICAL CIRCUIT TO PROVIDE A REGULATED SUPPLY VOLTAGE REMOVAL OF THE VALVE FROM THE SOCKET DISCONNECTS THE VOLTAGE FROM THE LOAD

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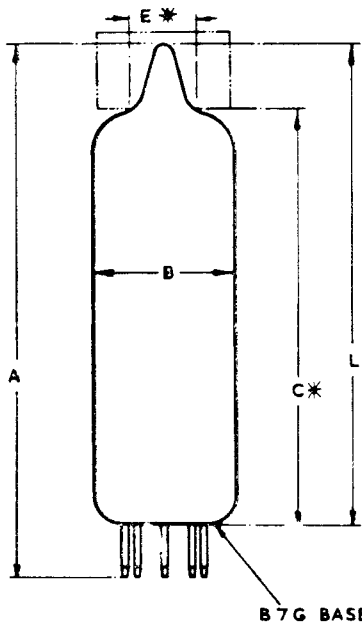

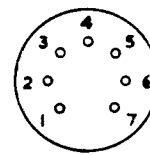

BASING

1 ANODE
2 CATHODE
3 INTERNALLY CONNECTED
4 CATHODE
5 ANODE
6 INTERNALLY CONNECTED
7 CATHODE

*DENOTES:—MEASURED FROM BASE SEAT TO BULB TOP LINE, AS DETERMINED BY RING GAUGE OF 'E' INT. DIA.

	DIM	MILLIMETRES	INCHES
	A	63·5 ± 3·2	$2\frac{1}{2} \pm \frac{1}{8}$
	B	19·1 MAX.	$\frac{3}{4}$ MAX.
*	C	50·8 ± 2·4	$2 \pm {}^{*}\frac{3}{32}$
	L	60·3 MAX.	$2\frac{3}{8}$ MAX.
*	E	11·1 DIA.	$\frac{7}{16}$ DIA.

NOTE:—BASIC FIGURES ARE IN INCHES.