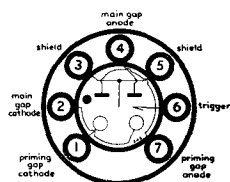


TYPE G1/371K HIGH SPEED PRIMED-TRIGGER COLD-CATHODE TUBE



The G1/371K is a high-speed primed-trigger tube developed for use with the G10/241E Unidirectional Cold-Cathode Gas Filled Decade Counter for which a single cathode trigger tube is required as a coupling element between tubes. Its speed and general characteristics, however, make it a useful general component. It also has features which make it specially suitable for use in circuits where a high input impedance is required.

MAIN ELECTRODE CHARACTERISTICS

Maximum pulse current output	...	...	...	15	mA
Maximum D.C. current output	...	...	...	10	mA
Minimum D.C. current output	...	...	...	2	mA
Anode supply voltage range	...	...	...	270 to 360	V
Main gap maintaining voltage	...	...	...	175 to 185	V
Maximum cathode voltage output	...	...	...	140	V
Shield voltage applied through 50 k Ω	...	...	...	150	V
Trigger Bias (for V_a up to 325 V)	...	...	...	0 to 165	V
Trigger Bias (for V_a up to 360 V)	...	...	...	60 to 165	V
††Trigger breakdown potential on application of a 25 micro-second square pulse based on maximum bias	...	...	...	12 to 26	V
*De-ionisation Time (max.)	...	...	...	30	μ sec
†Transfer Time (nom.)	...	...	...	0.5	μ sec

DIRECT INTERELECTRODE CAPACITANCES

Trigger to cathode	...	...	...	3.0	pF
Trigger to all other electrodes	...	...	...	5.0	pF

PRIMING GAP CHARACTERISTICS

Priming gap current	...	...	...	0.2 to 0.5	mA
Anode feed resistance	...	...	...	390	k Ω
Cathode resistance to earth or main gap cathode potential	...	...	...	56	k Ω

The priming gap cathode must not be more than 140 volts negative to the main cathode at any time.



* De-ionisation time to be short enough to permit a re-application of the nominal working voltage (90 per cent of maximum, i.e. 325 volts) 30 micro-seconds after the extinguishing of a D.C. discharge of maximum rated current by means of a rectangular pulse applied to the anode. The base of the extinguishing pulse shall be 20 volts below the V_m of the main gap, all other electrodes may be at potentials within their working range.

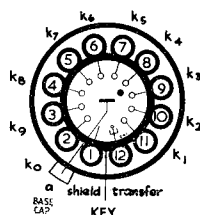
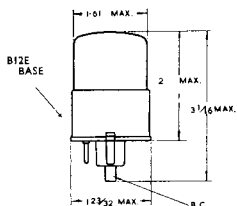
† This is the time interval between current flowing in the trigger cathode circuit as the result of applying a trigger pulse, and conduction starting in the main anode-cathode gap.

†† For pulse widths of less than 25 μ sec, the triggering pulse $\leftarrow$ amplitude is an inverse function of the pulse width.

For details of circuitry, apply to Standard Telephones & Cables Ltd., Special Valve Sales, Connaught House, Aldwych, London, W.C.2.



TYPE G10/241E UNIDIRECTIONAL COLD-CATHODE GAS-FILLED DECADE COUNTER



The G10/241E is a single-ended cold-cathode unidirectional gas-filled counter and distributor tube. It has ten cathodes which are used to indicate the number of the count, either visually at low speeds or by means of the voltage developed across the cathode load at high speeds. It is capable of counting pulses at repetition speeds from approximately 0 up to 20 kc/s.

Each cathode provides a voltage output that is sufficient either to operate a coupling tube to the next counter stage or a registering circuit. The tube has been designed so that it is possible to view the discharge directly at low speeds, and so obtain a direct indication of the count. To this end the holes in the anode through which the glow is visible have been numbered.

D.C. CHARACTERISTICS (Nominal)

Anode-cathode breakdown voltage	280	V
Anode-transfer electrode breakdown voltage	280	V
Anode-cathode maintaining voltage (approx.)	180	V
Cathode current	3.7	mA

A special socket has been designed for use with this valve (McMurdo type X12E).

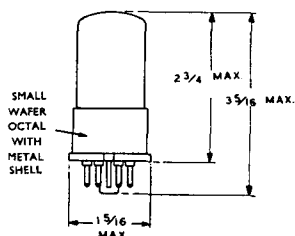
continued overleaf

G10/241E G150/2D

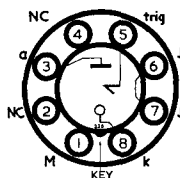
TYPICAL OPERATING CONDITIONS (For pulse repetition frequencies up to 5 kc/s.)

H.T. supply voltage (stabilised)	...	...	...	315 to 345	V
Transfer electrode bias (nominal)	...	...	...	75	V
Shield bias (nominal)	...	...	...	90	V
Anode load	...	...	...	$24 \pm 2\%$	k Ω
Cathode load	...	...	...	$15 \pm 5\%$	k Ω
Cathode load capacitor	...	...	...	$0.005 \pm 20\%$	μ F
Transfer pulse amplitude	...	...	...	120 ± 15	V
(Measured at the input capacitor with G10/241E in circuit.)					
Transfer pulse width	...	...	...	16 ± 4	μ s
Cathode pulse output (min.)	...	...	...	40	V

For full technical details for this valve, apply Standard Telephones & Cables Ltd., Special Valve Sales, Connaught House, Aldwych, London, W.C.2.



TYPE G150/2D COLD CATHODE GAS-FILLED TRIODE



The G150/2D is a cold cathode, three-electrode, gas-filled triode. It has an activated cathode giving a low maintaining voltage, together with a good life performance.

CHARACTERISTICS

Minimum control gap breakdown voltage	...	...	...	60	V
Maximum control gap breakdown voltage	...	...	...	80	V
Nominal control gap maintaining voltage	} At 20 mA	...	...	60	V
Maximum control gap maintaining voltage		Cathode	...	...	...
Maximum control gap maintaining voltage	} Current	...	...	70	V
Minimum main gap breakdown voltage		...	...	150	V
Minimum main gap maintaining voltage	} At 20 mA	...	...	60	V
Maximum main gap maintaining voltage		Cathode	...	...	...
Maximum main gap maintaining voltage	} Current	...	...	77	V
Recommended value of operating current for relay operation		...	...	20	mA
Recommended value of operating current for counter applications	...	...	...	2	mA

MAXIMUM RATINGS

Maximum peak cathode current	...	...	...	50	mA
Maximum average cathode current	...	...	...	30	mA

DYNAMIC CHARACTERISTICS

Transfer

For general dynamic behaviour, see curves at the end of this data.



De-ionisation

It should be noted that the curves shown refer to most unfavourable conditions. If the negative going pulse went to approximately 45 volts, instead of to zero, the de-ionisation time would be improved by as much as a factor of three.

APPLICATION NOTE

The life expectancy of these valves is a function of cathode current. Curves showing typical figures of life versus D.C. cathode current are included in this data.

