DECADE SELECTOR AND COUNTING TUBE

Short all-glass cold-cathode selector tube with neon-type glow viewed through the dome of the bulb. The tube has 10 main cathodes with separate connections, and counts in either direction at speeds up to 5kc/s.

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This data should be read in conjunction with OPERATING NOTES – COUNTING AND SELECTOR TUBES which precede this section of the handbook.

This tube has been designed to close mechanical tolerances so that no individual adjustment is necessary to align the bulb with the escutcheon.

In circuits where less than 10 outputs are required (e.g. counting circuits), the unused cathodes should be connected together and returned to zero voltage.

All voltages are referred to the most positive supply potential to which any main cathode (not guide cathode) is returned.

RECOMMENDED OPERATING CONDITIONS

For double pulse and integrated pulse drive

Anode supply voltage	475		V
Anode resistor	820		kΩ
Anode current (nominal)	340		μA
Guide bias supply voltage	+40		V
Guide pulse amplitude	100		V
*Guide pulse duration	75		μs
Bias supply voltage to any main cathode	0	−12	V
**Cathode resistor	82	120	kΩ
Output pulse (nominal)	23	35	V

*This figure applies for counting at 4kc/s. For operation at lower frequencies, a longer pulse duration is desirable.

For counting at frequencies up to 5kc/s the limit operating conditions should be consulted.

**Where a cathode is returned to a potential of −12V, a cathode series resistor of 47kΩ minimum should be included. Where a cathode is returned to 0V and no output is required, the cathode resistor can be omitted.

from JEDEC release #4108, Jan. 28, 1963

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CHARACTERISTICS AND LIMIT OPERATING CONDITIONS

The values given state the range over which the tube will operate both initially and during life. No allowance has been made for supply voltage and component variations.

Supply voltage		
Maximum	550	V
Minimum	375	V
†Minimum time constant of rise of anode supply voltage when switching on	1.0	ms
Nominal maintaining voltage ($V_{a(b)}$ = 475V, R_a = 820kΩ)	195	V
Cathode current		
Maximum	525	μA
Minimum	250	μA
Maximum negative bias voltage on any main cathode	20	V
Guide voltage		
Positive bias		
Maximum	60	V
Minimum for counting speeds up to 5kc/s	35	V
Minimum for counting speeds up to 1kc/s	25	V
Minimum negative to ensure stepping	45	V
††Negative reset pulse voltage to any main cathode		
Minimum required	120	V
Maximum permitted	225	V
Maximum voltage between any two main or guide cathodes	140	V
Maximum counting rate	5.0	kc/s
Minimum time between two successive input pulses	200	μs
Minimum period of discharge on each guide or main cathode	60	μs

†If the power supply does not have a suitable time constant as one of its characteristics, it can conveniently be obtained by inserting a 5kΩ resistor in series with the anode supply and a 0.2μF capacitor to earth.

††The permitted reset pulse should have minimum time constants of rise and fall of 1ms.

ABSOLUTE MAXIMUM RATINGS

Maximum supply voltage	550	V
Maximum cathode current	525	μA
Maximum voltage between any two main or guide cathodes	140	V
Maximum positive guide bias voltage	60	V
Maximum ambient temperature	50	°C

DECADE SELECTOR AND COUNTING TUBE

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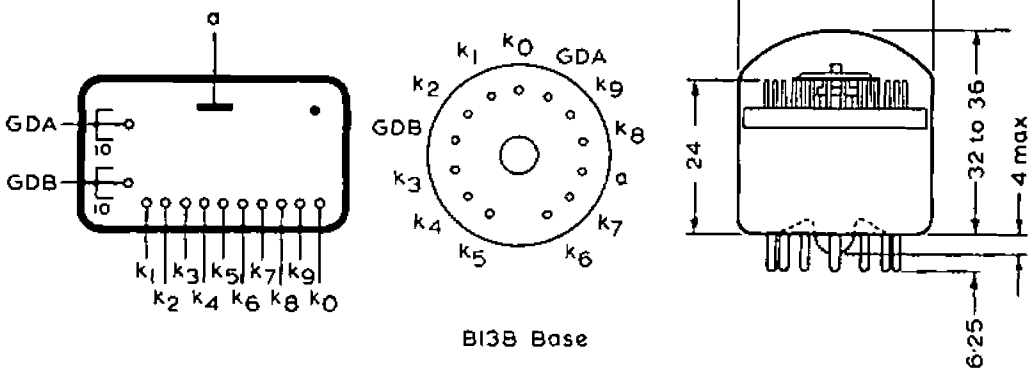
OPERATING NOTE

1. It is preferable to store and operate the tube as near as possible to room temperature.

ACCESSORIES

Valve holder	B8 700 67



B13B Base

All dimensions in mm

k_0 is aligned with pin 7 to within ±3°

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