

SUBMINIATURE COLD CATHODE TRIGGER TUBE

Z700U

Subminiature cold cathode trigger tube with primer cathode and ignited by a positive trigger potential. Primarily intended for use in decade counting and switching circuits up to maximum counting speeds in the region of 2 to 5kc/s.

To ensure that the characteristics of the tube are maintained in both light and darkness a priming discharge of some $3\mu\text{A}$ flowing continuously between anode and priming cathode is necessary.

PRELIMINARY DATA

CATHODE

cold

CHARACTERISTICS

†*Trigger ignition voltage (V_a — 250V d.c.)	137 to 153	V
Recommended anode working voltage range	200 to 310	V
*Anode to cathode maintaining voltage (I_a — 3mA)	111 to 121	V
Typical trigger to cathode maintaining voltage (see page 6)	115	V
Recommended average cathode current range	2.0 to 4.0	mA
Recommended priming cathode resistor	18	MΩ
Minimum anode to priming cathode supply voltage	200	V

†The drift in trigger ignition voltage per tube is generally less than 3V. However, when the tube is ignited for very long periods, drawing negative starter current, a shift of trigger ignition voltage up to 175V may occur.

TRANSFER REQUIREMENTS

Current triggering:

*Maximum transfer current (V_a — 250V) 30 μA

*These limits apply over life.

LIMITING VALUES (absolute ratings)

Maximum anode voltage	310	V
Maximum cathode current		
Peak	16	mA
Average (max. averaging time 1s)	4.0	mA
Maximum negative trigger current	See note 4	

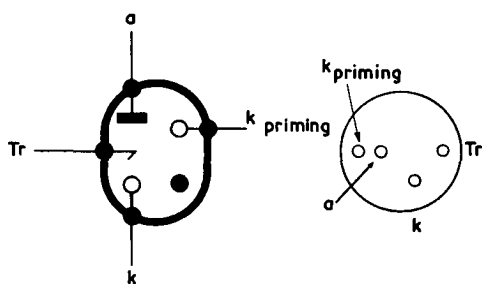
OPERATING NOTES

1. The trigger and priming cathode resistors should be mounted close to the tube.
2. Direct soldered connections to the leads of this tube must be at least 5mm from the seal and any bending of the tube leads must be at least 2.0mm from the seal.
3. If a tube is ignited with short pulses (20 μs), the total trigger voltage (bias + pulse) must exceed 153V. A typical value with a 100pF coupling capacitor is 175V.
4. With the tube ignited the negative trigger current must not exceed 100 μA .
5. The tube should not be mounted in contact with external conductive elements or spurious triggering may occur.

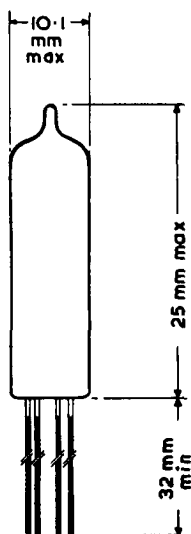
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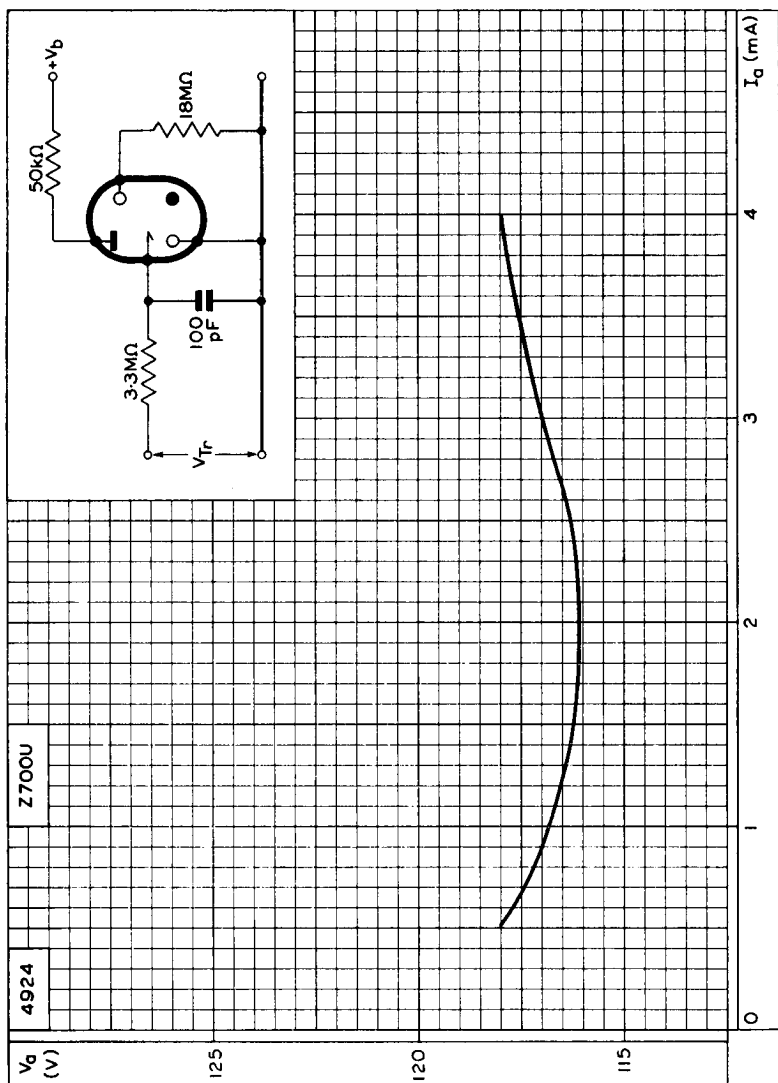
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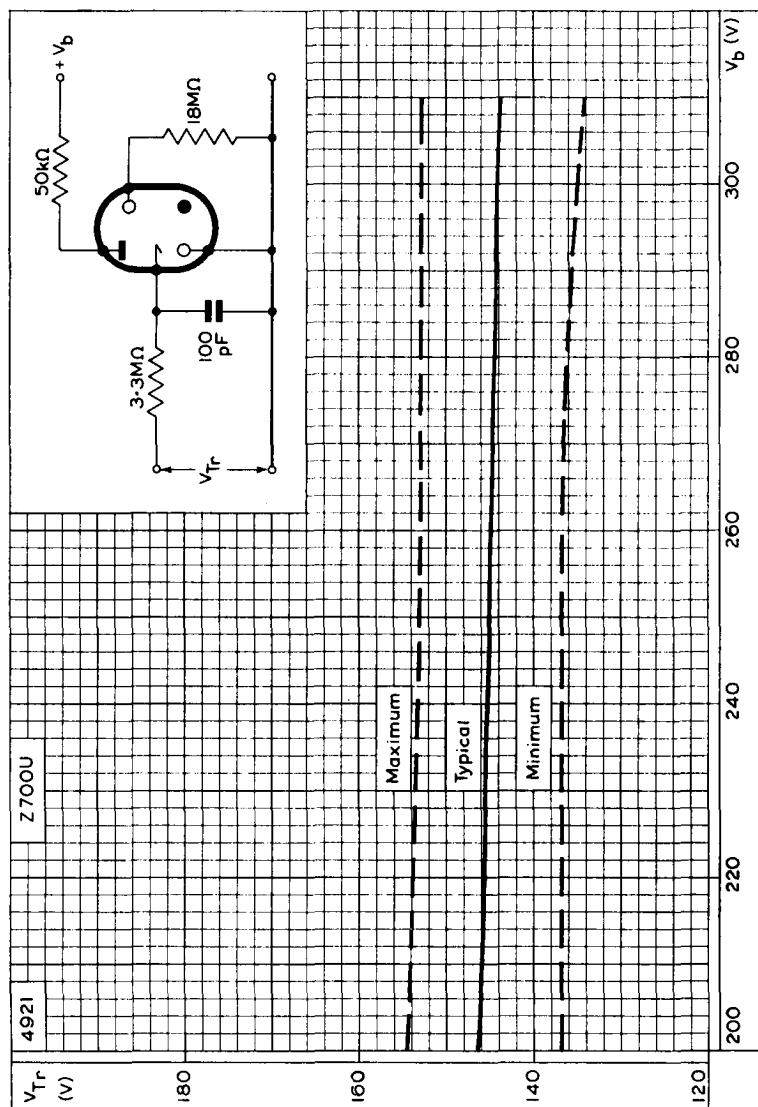


TYPICAL ANODE MAINTAINING VOLTAGE CHARACTERISTIC

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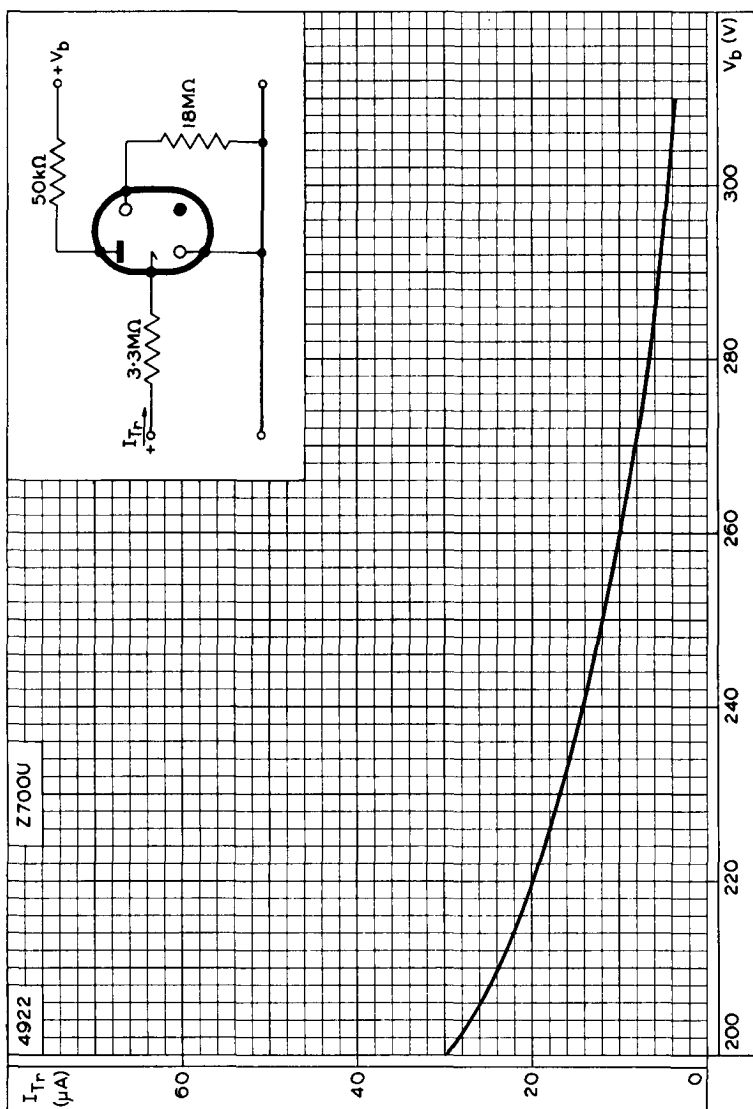


TRIGGER BREAKDOWN CHARACTERISTIC

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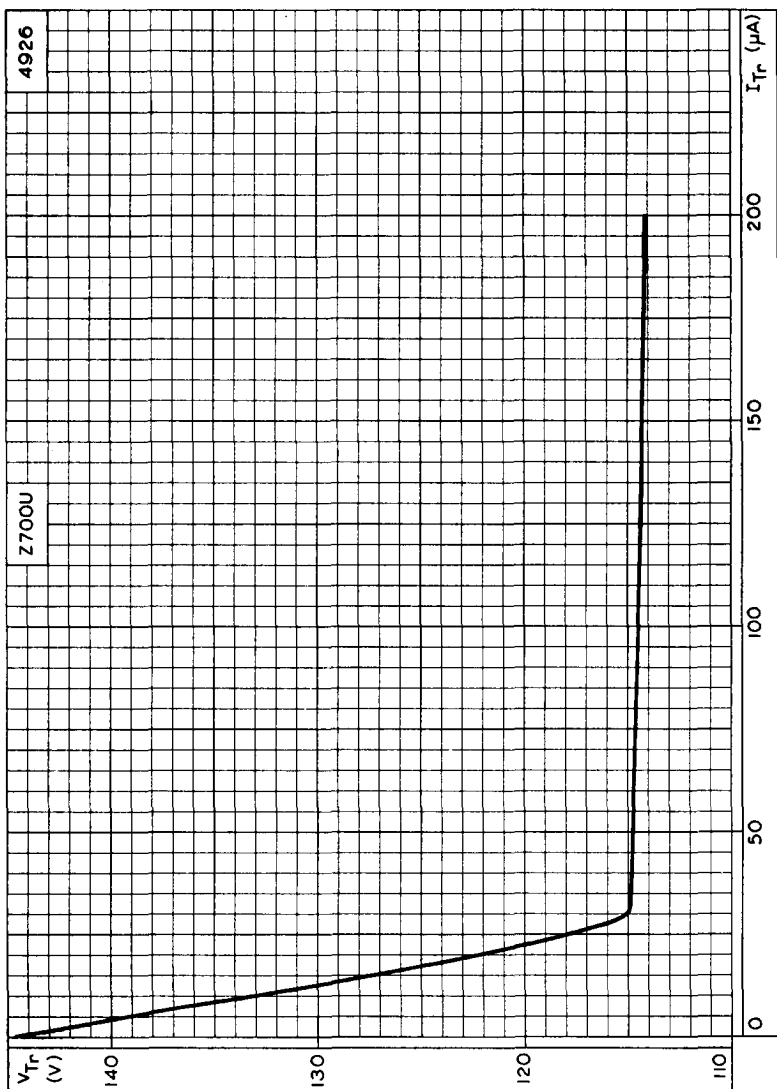


TYPICAL TRANSFER CHARACTERISTIC

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TYPICAL TRIGGER MAINTAINING VOLTAGE CHARACTERISTIC