

MECHANICAL DATA

Bulb	T-3
Base	Subminiature
Pin Connections	See Drawing
Outline	See Drawing
Mounting Position	Any

ELECTRICAL DATA

RATINGS (Absolute Maximum)

	Min.	Max.
Hold-Off Voltage ¹	—	500 Volts
Anode Voltage	350	500 Volts
Trigger Grid Firing Voltage	220	— Volts
Trigger Grid Bias Voltage	0	0 Volt
Power Input ²	—	1 Watt
Peak-Cathode Current	10	— Amps

TYPICAL OPERATION

Anode Voltage	450 Volts dc
Trigger Grid Bias	0 Volt
Trigger Pulse Voltage	300 Volts
Discharge Condenser	0.25 μ fd
Keep-Alive Current	45 μ a
Frequency ²	1 pps
Power Input ²	0.025 Watt

NOTES:

1. Hold-off voltage is defined as the greatest anode voltage at which the tube will not fire without the application of a triggering pulse to the trigger grid. It depends on the circuit design and the voltage-current conditions.
2. The maximum power input is given by $W = 1/2CV^2f$, where C is the discharge capacitance in microfarads, V is the anode voltage in kilovolts, and f is the number of flashes or pulses per second. This relation also determines the maximum repetition rate.

APPLICATION DATA

The Sylvania Type 6483 has been designed to meet a long-standing need for a small, reliable and economical trigger tube.

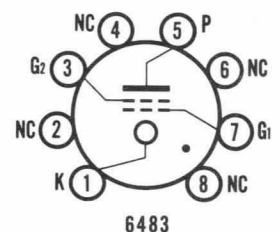
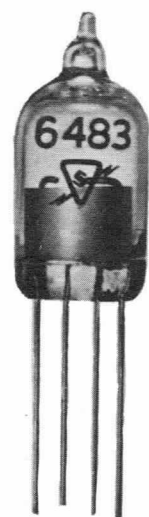
Being of the cold cathode type, the 6483 requires no filament supply. Positive and uniform firing is assured through the use of a keep-alive grid which, in typical circuits, draws only about 45 microamperes. Delay time after application of the trigger pulse is but a few microseconds. (See Figure 3.)

Deionization time has been reduced to a point where the tube's usefulness is extended to several hundred cycles per second in proper circuits. The low design voltage of the 6483 trigger tube immediately suggests its operation from standard dry batteries now readily available for electronic photoflash equipment. As a trigger for the flash tube in the latter type of equipment, it provides foolproof zero delay ("X") synchronization on cameras so equipped or easily modified. The very high impedance of the switch circuit reduces the current through the contacts to a minimum. This insures long switch life and virtually eliminates the "surprise" effects of inadvertent physical contact with the switch terminals. Also, since the 6483 tube may be triggered directly from a type 929 or similar vacuum phototube, it makes possible remote operation of any number of slave flash units without interconnecting wires to the camera shutter switch.

The 6483 tube is extremely useful in the general field of relay and switching circuitry where size, reliability and power requirements are of importance.

QUICK REFERENCE DATA

The Sylvania Type 6483 is a ruggedized cold cathode trigger tube for electronic relay and switching service.



**SYLVANIA
ELECTRONIC TUBES**
A Division of
Sylvania Electric Products Inc.
**RECEIVING TUBE
OPERATIONS
EMPORIUM, PA.**

Prepared and Released By The
TECHNICAL PUBLICATIONS SECTION
EMPORIUM, PENNSYLVANIA

DECEMBER, 1963

PAGE 1 OF 3

File Under
**SPECIAL PURPOSE
ELECTRONIC TUBES**

CIRCUIT OPERATION

The general circuits are shown (Figures 1 and 2) for typical operation of the Type 6483 trigger tube.

Figure 1 shows a basic circuit for operation as a trigger pulse source. The pulse is derived from TR1, an ignition coil of the variety available for photoflash equipment or small model gasoline engines, having a low impedance primary.

Figure 2 shows a slightly modified circuit particularly adapted to photoflash equipment. Means are shown for triggering by use of the camera shutter or photocell activated by a master electronic flash unit.

Circuit operation in Figure 2 is as follows:

Upon closing switch S by means of the camera shutter (or photocell), the trigger grid of the 6483 receives a positive voltage pulse approximately equal to the drop across R1 under steady state conditions.

R2 is used to limit the current through the switch as well as to isolate the switch from the voltage divider.

C1 is used to couple the trigger pulse to the trigger grid. In the steady state, C1 is charged to approximately the voltage appearing across R3.

R4 is the grid return resistor across which the effective trigger voltage is developed. It returns the trigger grid to cathode potential, thereby establishing a zero bias condition.

R8 is necessary to prevent the 6483 tube from shorting C3 during the firing interval.

R6 maintains a keep-alive current of proper value.

C2 is charged to essentially the supply voltage of the system. When the 6483 fires, C2 is discharged through the trigger tube and the primary of the ignition coil, causing an extremely high secondary voltage pulse of the type required to ionize the flash tube T2.

T2, when ionized, obtains its breakdown energy from condenser C3.

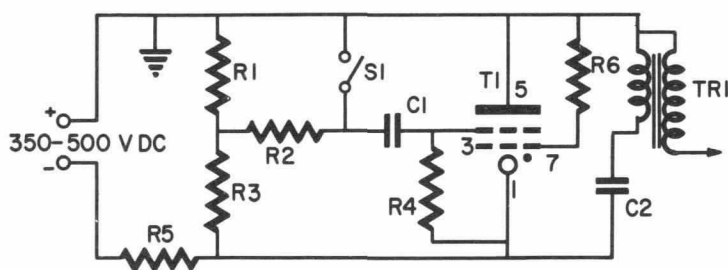


Figure 1

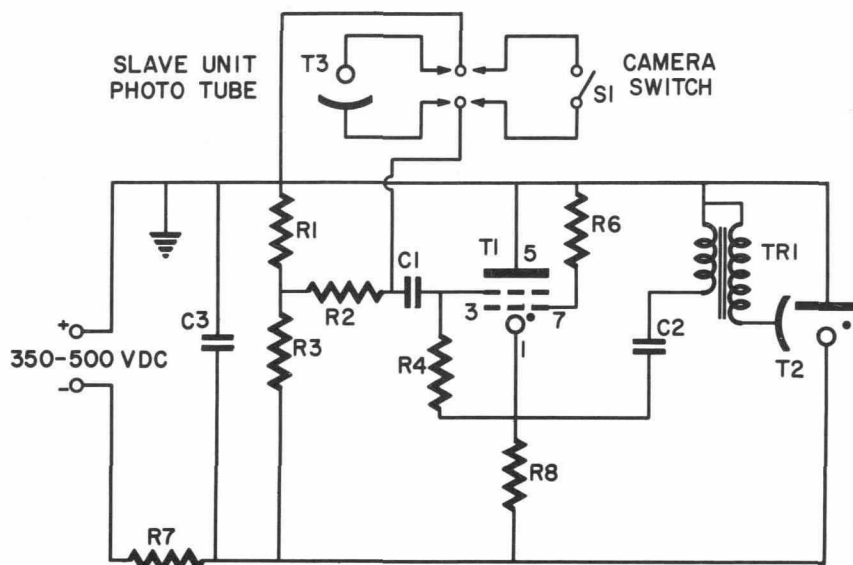


Figure 2

SUGGESTED CIRCUIT VALUES

C1 = 0.01 MFD, 600 V.

C2 = 0.1-0.25 MFD, 600 V.

C3 = SELECTED WITHIN T2 RATING

T1 = SYLVANIA 6483

T2 = 350-500 V. HIGH PRESSURE
FLASH TUBE

T3 = SYLVANIA 929 PHOTOTUBE

TR1 = IGNITION COIL

SI = SWITCH

R1 = 5.1 MEG., $\frac{1}{2}$ WATT

R2 = 5.1 MEG., $\frac{1}{2}$ WATT

R3 = 2.7 MEG., $\frac{1}{2}$ WATT

R4 = 5.1 MEG., $\frac{1}{2}$ WATT

R5 = 1.0 MEG., 2 WATTS

R6 = 10 MEG., $\frac{1}{2}$ WATT

R7 = 500-1000 OHM, 10 WATTS

R8 = 0.1 MEG., 2 WATTS

D61023

TYPICAL TIME DELAY CHARACTERISTICS

