ADVANCE DATA

MECHANICAL DATA

Bulb T 5 1/2
Base Tinned Flexible Leads
(2 15/16" Min. Length)
Mounting Position Any

ELECTRICAL DATA

Anode Voltage 500 to 1000 Volts dc
Trigger Voltage
 .tp = 2 μsec 215 Volts Min.
 .tp = 200 μsec 180 Volts Min.
(See Control Data)

Peak Cathode Current
  Minimum 10 Amperes
  Maximum 500 Amperes

Power Input\(^1\)
  1 Watt Max.

Trigger Grid Bias\(^2\)
  0 Volts

Trigger Grid Current
  10 μA Min.

Keep Alive Current
  30 to 100 μA

Anode Delay Time
  8 μsec Max.

Ambient Temperature
  -55 to +85 °C

TYPICAL OPERATION

Anode Voltage 500 Volts dc
Trigger Voltage, tp = 200 μsec 180 Volts
Peak Cathode Current
  Frequency 1 pps
  Trigger Grid Bias 0 Volts
  Keep Alive Current 50 μA
  Power Input 1/8 Watt

NOTES:

1. \(\text{Watts} = \frac{PCV^2}{2} \), where \(C\) = Discharge Capacity in μF
   \(V\) = Anode Voltage in KV
   \(F\) = pps (Trigger pulses per sec.)

2. Grid may be run positive with respect to cathode in order to decrease trigger voltage with some reduction in hold-off voltage (i.e. - Reduction in upper anode voltage range)

from JETEC release #1666, June 18, 1956
APPLICATION DATA

The Sylvania Type 6873 trigger tube is an inert-gas filled, internally-triggered, cold cathode tube of extremely rugged and reliable design. The tube is designed for electronic relay and switching service involving extremely high instantaneous peak currents of the order of hundreds of amperes — at low average current levels.

A special grid design enables the 6873 to be triggered by a pulse of very low power (1-2 milliwatts). Because of this, it is possible to trigger the 6873 directly from a phototube without intervening amplifiers. The 6873 tube directly bridges the gap between very low instantaneous current levels and very high instantaneous current levels.

The extremely rugged and reliable design of the 6873 tube makes it ideal for use in applications requiring dependable operation under extreme environmental conditions of shock, vibration, and temperature variations.

The use of a keep-alive grid insures relatively stable triggering characteristics throughout life with a maximum anode delay of 8 microseconds under typical operating conditions.

The 6873 comes equipped with flexible lead wires eliminating the need for a tube socket and, because direct connections are required, a resulting increase in reliability is obtained.

Since the 6873 cathode depends upon a minimum peak current for its activation, Sylvania recommends that circuit values be chosen to insure at least 10 amperes minimum peak current flow during each operation.
R\textsubscript{1} : 50 ohms to 100,000 ohms* typical

R\textsubscript{2} : 10 megohms to 30 megohms*

R\textsubscript{3} : Depends on "pps" and "C2"

\[ R\textsubscript{3} \approx \frac{1}{C\textsubscript{2} \times \text{pps}} \]

where:

pps = operating frequency

C\textsubscript{1} : 0.1 \text{ mfd} 600 \text{ w Vdc}

C\textsubscript{2} : 0.1 - 0.25 \text{ mfd typical}

\text{egy} : 180-250 \text{ V at 2.0 } \mu\text{sec min. duration}

E\textsubscript{bb} : 500-2000 \text{ Vdc}

L : usually low impedance so that peak current
is \approx 10 \text{ amperes (i.e. ignition transformer)}

*see ratings for limitations
1. Grid pulses are square wave.
2. Keep Alive Current and are of duration "t" sec.
3. Grid bias is 0 V \\
   (i.e., Grid at Cathode)

NOTES:
CONTROL DATA