THYRATRON TYPE WL-7306

The WL-7306 is a three-electrode, inert gas filled thyatron with a negative control characteristic. This tube is designed primarily for industrial control applications.

**ELECTRICAL:**
- Cathode: Directly Heated Coated Filament
- Voltage: 2.37, 2.50, 2.63 Volts
- Current at Filament Volts=2.5: 9.0, 11 Amperes
- Heating Time: 30 Seconds
- Ionization Time (approx.): 10 µsec
- Critical Grid Voltage: See CE-A1451
- Maximum Critical Grid Current: 10 µamp
- Anode to Grid Capacitance: 2 µf
- Grid to Cathode: 10 µf
- Typical Arc Drop: 10 Volts
- Control Characteristic: Negative

**MECHANICAL:**
- Mounting Position: Any
- Overall Height (approx.): 5-3/16"
- Overall Diameter (Maximum): 1-9/16"
- Type of Cooling: Air, Unrestricted Convection
- Temperature Range: -55 to +70 °C
- Bulb: T-12
- Anode Cap: JEDEC C1-5
- Base: JEDEC A4-10
- Net Weight: 3 oz
- Shipping Weight (approx.): 24 oz

**ABSOLUTE MAXIMUM VALUES**
- Peak Anode Voltage:
  - Forward: 1000 max. Volts
  - Inverse: 1250 max. Volts
- Anode Current:
  - Peak: 30 max. Amperes
  - Average: 2.5 max. Amperes
  - Averaging Time: 4.5 max. Sec.
- Surge, max. Duration 0.1 sec.:
  - Connection (a): 240 max. Amperes
  - Connection (b): 120 max. Amperes
  - Connection (c): 120 max. Amperes
- Commutation Factor:
  - 0.66 max. VA/sec
- Negative Control Grid Voltage:
  - Before Conduction: 100 max. Volts
  - During Conduction: 10 max. Volts
- Average Positive Control Grid Current:
  - Averaging Time=1 cycle: 0.10 max. Ampere
  - Operating Frequency: 150 max. cps

General: These ratings are important in the prevention of "clean-up" or loss of the inert gas filling. Their observation will reduce the bombardment of anode or grid by positive ions of the gas filling, which may cause the gas ions to be absorbed in the tube element concerned.

- *Commutation factor is the product of the rate of current decay in amperes per microsecond just prior to the end of commutation and the rate of reverse voltage rise in volts per microsecond just after the end of commutation. Its value should not exceed the value given in order to reduce ion bombardment of the anode during the ionization period. Value given is for a maximum initial reverse voltage of 350-volts.*

- § When the tube conducts, positive ions are attracted to a grid at a negative potential. This positive ion current flowing through the grid resistor will reduce the negative voltage at the grid from the higher negative grid supply voltage. To reduce ion grid bombardment, sufficient resistance must be provided to drop the negative grid supply voltage to a value not more negative than -10 volts as shown in the ratings.

- ¶ This rating indicates the heat emission properties of the grid. This value of current may be safely drawn to the grid if conduction occurs only while the anode is positive. However, during the period of negative anode potential, the grid potential must also be negative to prevent electrons being drawn to the grid and generating positive ions which would bombard the anode.

- ° For higher frequency ratings, consult the tube manufacturer.

§ These ratings are effective only when the anode return connections are made according to the diagrams shown in CE-A1468.
ANODE RETURN CONNECTIONS

(a) 

(b) 

(c) 

CRITICAL GRID VOLTAGE

D.C. Grid Volts

Peak Anode Volts

No Conduction

Certain Conduction

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