IGNITRON

The GL-6958 is a double-grid ignitron designed for industrial rectifier or inverter applications where it will operate at peak inverse voltages as high as 4000 volts. In such applications six tubes will supply 3000 kilowatts at voltages of 1800 or 3600 volts d-c, depending upon the circuit used.

A particular design feature of this tube makes it especially suitable for use where voltage control by phase retard is in excess of the amounts usually required. In addition, the tube features a coaxial cathode current return which reduces magnetic fields caused by the tube currents.

TECHNICAL INFORMATION

GENERAL

Electrical

Cathode Excitation - Cyclic
Cathode Spot Starting - Ignitor

Number of Electrodes

- Main Anodes: 1
- Auxiliary Anodes: 1
- Main Cathodes: 1
- Ignitors: 2
- Shield Grids: 1
- Control Grids: 1

Arc Drop

- At 1000 Peak Amperes: 20.5 ± 2 Volts
- At 2000 Peak Amperes: 24.0 ± 2 Volts

Mechanical

Envelope Material - Stainless Steel
Net Weight: 95 Pounds

Thermal

Type of Cooling - Water

- Inlet Water Temperature, minimum: 30° C
- Outlet Water Temperature, maximum: 55° C

Water Flow

- At Continuous Rated Average Current, minimum: 10 Gallons per Minute
- At No Load, * minimum: 1 Gallons per Minute
- Temperature Range: 40 to 45° C

Characteristics for Water Cooling at 10 Gallons per Minute

- Water Temperature Rise, maximum: 6.5° C
- Pressure Drop, maximum: 1.5 Pounds per Square Inch
- Working Pressure - Non Shock, maximum: 100 Pounds per Square Inch
MAXIMUM RATINGS AND TYPICAL OPERATION

Power-Rectifier or Inverter Service, Continuous Duty
Ratings are for Zero-Phase-Control Angle

Maximum Peak Anode Voltage
  Inverse. .............................................. 4000 Volts
  Forward. .............................................. 4000 Volts

Maximum Anode Current
  Peak ................................................. 2000 Amperes
  Average
    Continuous ........................................... 275 Amperes
    Two Hours. ......................................... 350 Amperes
    One Minute ........................................... 570 Amperes
  Fault
    Forward Direction. .................................. 15,000 Amperes
    Reverse Direction. .................................. 30,000 Amperes
    Maximum Duration of Fault Current. ................. 0.15 Seconds
  Frequency Range. ..................................... 25 to 60 Cycles per Second

Ignitor Characteristics
  Maximum Inverse Voltage. .............................. 5 Volts
  Recommended Pulse Width. ............................. 800 Microseconds
  Minimum Pulse Width
    Average Anode Current Greater than 8 Amperes .. 150 Microseconds
    Maximum Pulse Width. ................................. 4000 Microseconds

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
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</table>
| 200     | 500     | Volts
| --      | 200     | Volts
| 0.2     | 5.0     | Amperes
| --      | 0.2     | Amperes
| 200     | 500     | Volts
| 100     | 200     | Volts
| 0.4     | 5.0     | Amperes
| 0.4     | 1.0     | Amperes
| -90     | -110    | Volts

* Water flow should be continued for 30 minutes after removal of anode power.