PRELIMINARY DESCRIPTION AND RATING

IGNITRON GL-6509

The GL-6509 is an igniton for railroad locomotive rectifier service. This tube is designed to supply the auxiliary power requirements in those locomotives that utilize the GL-6504 igniton as the main power supply. In addition to this service the 6509 ratings also make the tube particularly suitable for use as the main power source in multiple-unit car installations.

The tube is similar in construction to the GL-5555/PC-238-B igniton but has the additional feature of baffles in the mercury pool to assure contact between the mercury and the ignitor points during swaying of the equipment.

TECHNICAL INFORMATION

GENERAL

Electrical

Cathode Excitation - Cyclic
Cathode-Spot Starting - Ignitor
Number of Electrodes
Main Anodes 1
Main Cathodes 1
Ignitors 3
Arc Drop
At 600 Amperes Peak 16.2 ± 0.5 Volts

Mechanical

Envelope Material - Metal
Net Weight 25 Pounds

Thermal

Type of Cooling - Water
Inlet Water Temperature, minimum 30 Centigrade
Outlet Water Temperature, maximum
Peak Inverse Anode Voltage = 900 60 Centigrade
Peak Inverse Anode Voltage = 2100 45 Centigrade
Water Flow
At Continuous Rated Average Current, minimum 3 Gallons per Minute
At No Load, minimum 1 Gallon per Minute
Characteristics for Water Cooling at Rated Minimum Flow
Water Temperature Rise, maximum 4.5 Centigrade
Pressure Drop at 3 Gallons per Minute, maximum 2 Pounds per Square Inch

MAXIMUM RATINGS

Power-Rectifier Service *, Continuous Duty

Maximum Peak Anode Voltage
Inverse 900 2100 Volts
Forward 900 2100 Volts

GENERAL ELECTRIC COMPANY
from JETEC release #1335, July 23, 1954
MAXIMUM RATINGS (Cont'd)

Power-Rectifier Service *, ASA - Continuous Duty

Maximum Anode Current

<table>
<thead>
<tr>
<th></th>
<th>Peak</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1800</td>
<td>1200 Amperes</td>
</tr>
<tr>
<td></td>
<td>200 Amperes</td>
<td></td>
</tr>
<tr>
<td>Continuous</td>
<td>150 Amperes</td>
<td></td>
</tr>
<tr>
<td>2 Hours, Averaged Over any 2-Minute Period</td>
<td>300 Amperes</td>
<td></td>
</tr>
<tr>
<td>1 Minute, Averaged Over any 1-Minute Period</td>
<td>300 Amperes</td>
<td></td>
</tr>
<tr>
<td>Fault</td>
<td>12000 Amperes</td>
<td></td>
</tr>
<tr>
<td>Maximum Duration of Fault Current</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Frequency Range</td>
<td>25 to 60 Cycles per Second</td>
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</tbody>
</table>

* Ratings are for Zero Phase-Control Angle

Ignitor Requirements

Volt-Ampere-Time Requirements - See Curve K-9033883

<table>
<thead>
<tr>
<th></th>
<th>5 Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Inverse Voltage</td>
<td></td>
</tr>
<tr>
<td>Maximum Current</td>
<td>15 Amperes</td>
</tr>
<tr>
<td>Root Mean Square</td>
<td>2.0 Amperes</td>
</tr>
<tr>
<td>Average</td>
<td></td>
</tr>
<tr>
<td>Maximum Averaging Time</td>
<td>10 Seconds</td>
</tr>
</tbody>
</table>

June 28, 1954

TUBE DEPARTMENT

GENERAL ELECTRIC COMPANY

SCHENECTADY 5, NEW YORK
IGNITOR VOLT-AMPERE REQUIREMENTS
SEALED-IGNITRON RECTIFIERS

THE IGNITOR Firing CIRCUIT SHOULD BE DESIGNED TO OPERATE WITHIN THE SHADeD AREA.