THE 6900 IS A MEDIUM-MU TWIN TRIODE IN THE 9 PIN MINIATURE HARD GLASS CONSTRUCTION. IT IS DESIGNED SPECIFICALLY FOR PULSE APPLICATIONS IN MISSILES, AIRCRAFT AND OTHER MILITARY AND INDUSTRIAL INSTALLATIONS. REQUISITES IN SUCH APPLICATIONS INCLUDE FREEDOM FROM EARLY FAILURES, LONG AVERAGE SERVICE LIFE AND UNIFORM OPERATING CHARACTERISTICS.

DIRECT INTERELECTRODE CAPACITANCES
WITHOUT EXTERNAL SHIELD

<table>
<thead>
<tr>
<th>Component</th>
<th>Capacitance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to Plate</td>
<td>4.0 pf</td>
</tr>
<tr>
<td>Input MAX</td>
<td>6.5 pf</td>
</tr>
<tr>
<td>Output Section 1</td>
<td>0.8 pf</td>
</tr>
<tr>
<td>Output Section 2</td>
<td>0.61 pf</td>
</tr>
<tr>
<td>Heater to Cathode</td>
<td>3.0 pf</td>
</tr>
</tbody>
</table>

HEATER CHARACTERISTICS AND RATINGS
DESIGN CENTER VALUES – SEE EIA STANDARD RS-239

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Characteristics</td>
<td>6.3 Volts, 1.0 Amps</td>
</tr>
<tr>
<td>Limits of Applied Voltage</td>
<td>6.3 ± 0.3 Volts</td>
</tr>
<tr>
<td>Heater - Cathode Voltage:</td>
<td>500 Volts</td>
</tr>
<tr>
<td>Heater Negative with Respect</td>
<td>500 Volts</td>
</tr>
<tr>
<td>Heater Positive with Respect</td>
<td>500 Volts</td>
</tr>
</tbody>
</table>

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MAXIMUM RATINGS
DESIGN CENTER VALUES – SEE EIA STANDARD RS-239

PLATE VOLTAGE 600 VOLTS
PEAK GRID VOLTAGE 100 VOLTS
POSITIVE VALUE 200 VOLTS
NEGATIVE VALUE 4.5 AMPS
PEAK CATHODE CURRENT @SEE CHART
PLATE DISSIPATION PER PLATE 4.25 WATTS
GRID CIRCUIT RESISTANCE 1.0 MEGOHM
AVERAGE WARM-UP TIME 45 SEC.

AVERAGE CHARACTERISTICS – EACH SECTION

PLATE VOLTAGE 120 VOLTS
GRID VOLTAGE -2.0 VOLTS
PLATE CURRENT 36 mA
TRANSCONDUCTANCE 11,500 µMHO
AMPLIFICATION FACTOR 18.5

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS – PULSE

BOTH SECTIONS IN PARALLEL

PLATE VOLTAGE 500 VOLTS
GRID PULSE (avg.) 450 VOLTS
GRID VOLTAGE -100 VOLTS
PLATE BIAS VOLTAGE 4.25 AMPS.
GRID CURRENT 0.50 AMP
PULSE TIME 10 µSEC
PULSE REPETITION RATE 250 PPS

SPECIAL TESTS AND RATINGS

ALTITUDE @SEE APPLICATION NOTE 80,000 FT.
BULB TEMPERATURE AT HOTTEST POINT ON BULB 300 °C
IMPACT SHOCK 500 G
VIBRATIONAL ACCELERATION 50 G
LIFE
HEATER CYCLING LIFE
FATIGUE
SHOCK
GLASS STRAIN

* TO OBTAIN GREATEST LIFE EXPECTANCY FROM TUBE, AVOID DESIGNS WHERE THE TUBE IS SUBJECT TO ALL MAXIMUM RATINGS SIMULTANEOUSLY.
APPLICATION NOTES

SPECIAL ATTENTION SHOULD BE GIVEN TO THE TEMPERATURES AT WHICH THE TUBES ARE TO BE OPERATED. RELIABILITY WILL BE SERIOUSLY IMPAIRED IF MAXIMUM BULB TEMPERATURE IS EXCEEDED. THE LIFE EXPECTANCY WILL BE REDUCED APPRECIABLY IF ABSOLUTE MAXIMUM RATINGS ARE EXCEEDED. BOTH RELIABILITY AND PERFORMANCE WILL BE JEOPARDIZED IF FILAMENT VOLTAGE RATINGS ARE EXCEEDED. LIFE AND RELIABILITY OF PERFORMANCE ARE DIRECTLY RELATED TO THE DEGREE THAT REGULATION OF THE HEATER VOLTAGE IS MAINTAINED AT ITS CENTER RATED VALUE.

THIS TUBE IS CONSTRUCTED USING NONEX GLASS AND THUS CAN WITHSTAND HIGHER AMBIENT TEMPERATURES IN OPERATION. HOWEVER, THE BULB TEMPERATURE SHOULD NEVER EXCEED 300°C AT ITS HOTTEST POINT AND COOLING SHOULD BE EMPLOYED IF NECESSITATED BY THE ADDITIVE EFFECTS OF OPERATION AT HIGH ALTITUDES AND HIGH DISSIPATION SIMULTANEOUSLY OR BY OTHER SOURCES OF HEAT IN THE EQUIPMENT.

THE PLATE VOLTAGE RATING AND HIGH-PERFORMANCE OF THE 6900 MAKE IT READILY ADAPTABLE TO VARIOUS PULSE APPLICATIONS. IN ORDER TO INSURE MAXIMUM RELIABILITY IN PULSE SERVICE THE PEAK CATHODE CURRENT SHOULD NOT EXCEED THE VALUE SHOWN IN PULSE RATING CHART FOR THE REQUIRED DUTY FACTOR.
AVERAGE PULSE CHARACTERISTICS BOTH SECTIONS IN PARALLEL

PLATE VOLTS

PLATE (I_P) OR GRID 2 (I_{C2}) - AMPERES

DUTY FACTOR (10,000 μSEC. AV. TIME) IS DEFINED AS THE RATIO OF "ON" TIME IN μSECONDS TO 10,000 μSECONDS.

ON TIME IS DEFINED AS THE SUM OF THE DURATION OF ALL INDIVIDUAL PULSES WHICH OCCUR DURING ANY 10,000 μSECOND INTERVAL.