**Requirements:**

1. **General:**
   
   A. Interpret drawing in accordance with standards prescribed by MIL-D-53279.
   
   B. Units shall meet the requirements of MIL-S-19500 with the exceptions and additions specified herein.
   
   C. The supplier shall conform to the quality assurance provisions as contained in NO 105404, CLASS 2.
   
   D. Units shall be capable of meeting the qualification requirements specified in NO 102594.
   
   E. Packaging and packing: Units packaging and packing shall be in accordance with MIL-S-19491 level A, in both instances.

2. **Acceptance and Inspection:**
   
   A. Electrical characteristics: Per Table 1.
      (1) Items 1 thru 5: 100 percent inspection.
      (2) Items 6 and 7: Sample in accordance with MIL-STD-105, inspection level 1, AQL of 4 percent.
   
   B. Mechanical properties:
      (1) Dimensions: Per outline, sample in accordance with MIL-STD-105, inspection level 1, AQL of 4 percent.
      (2) Markings: Diodes shall be marked in accordance with MIL-S-19500 with a black band denoting the cathode end and the three digits 751 per drawing. Unit packaging and exterior shipping containers shall be marked in accordance with NO 105404 and shall include the NASA drawing number, revision letter, and dash number.
   
   C. Lead material: Lead material shall be nickel per PS 1015400. Gold plating per paragraph 3.2 is optional. A certificate of compliance shall accompany each shipment.

3. **Design:**
   
   A. Absolute maximum ratings:
      (1) Power dissipation: 500 milliwatts at 25 degrees centigrade ambient temperature.
      (2) Junction temperature (TJ): From minus 65 degrees to plus 175 degrees centigrade.
      (3) Storage temperature (Tstg): From minus 65 degrees to plus 200 degrees centigrade.
      (4) Peak forward surge current (IF(surge)): 1 ampere for 1 second minimum. Repetitive duty cycle of 1 percent.
   
   B. Construction: Glass, hermetically sealed enclosure.
   
   C. Thermal shock: Units shall be capable of withstanding a thermal shock in silicon oil from zero degrees centigrade to plus 100 degrees centigrade for 5 complete cycles. Total immersion time each half cycle shall be 10 seconds. Eclipsed transfer time from one temperature extreme to the other shall not exceed 3 seconds. Units shall show no physical damage or lack of electrical performance after thermal shock.

**Figure 1**

Test circuit - reverse recovery time

**Table 1**

<table>
<thead>
<tr>
<th>Test Circuit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse generator</td>
<td>90 ohms</td>
</tr>
<tr>
<td>Diode under test</td>
<td></td>
</tr>
<tr>
<td>Sampling scope</td>
<td>90 ohms</td>
</tr>
<tr>
<td>DIA</td>
<td>0.05</td>
</tr>
<tr>
<td>2 LEADS</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

- Diode: Semiconductor device, diode
- Control drawing: SEMICONDUCTOR DEVICE, DIODE
- Specification control drawing: SPECIFICATION CONTROL DRAWING

**Identification**

- Code intent no. 1006751
- NASA drawing no. 979001
- Dimensions and tolerances are in inches
- Material: MOTT INSTRUMENTATION LAB HOLLAND, MICHIGAN
- Heat treatment: CERTIFIED HEAT TREATED
- Photograph: PHOTOREAL SCALE ONLY

**Approval**

- Date: 07/14/93
- Approval: FLA

**References**

- MIL-S-19500
- MIL-STD-105
- MIL-STD-750
- MIL-D-70327
- WD1002019
- ND 1002054

**Remarks**

- Units shall show no physical damage or lack of electrical performance after thermal shock.
- Lead bend test: Each lead shall be capable of withstanding a lead bend test in accordance with MIL-STD-750, method 2006, test condition E. A weight of 16 ounces plus or minus 1 ounce shall be applied to each lead. The lead shall be restricted such that the bend starts 3/4 inch plus or minus 1/32 inch from the body of the device. No mechanical damage or lack of electrical performance shall be evidenced after this test.

- Lead pull test: Each lead shall be capable of withstanding a lead pull test in accordance with MIL-STD-750, method 2006, test condition E. A weight of 4 pounds minimum for 1 minute. No mechanical damage or lack of electrical performance shall be evidenced after this test.