REQUIREMENTS:

1. GENERAL:
   A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7037.
   B. UNITS SHALL MEET THE REQUIREMENTS OF MIL-S-19500 WITH THE EXCEPTIONS AND ADDITIONS SPECIFIED HERIN.
   C. THE SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS AS CONTAINED IN ND 1015404, CLASS 2.
   D. UNITS SHALL BE CAPABLE OF MEETING THE QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1002054.
   E. PACKAGING AND PACKING: UNIT PACKAGING AND PACKING SHALL BE IN ACCORDANCE WITH MIL-S-19491.

2. ACCEPTANCE AND INSPECTION:
   A. ELECTRICAL CHARACTERISTICS: PER TABLE I.
   B. UNITS SHALL MEET THE REQUIREMENTS OF MIL-S-19500 WITH A BLACK BAR DENOTING THE CATHODE END. UNIT PACKAGES AND EXTERIOR SHIPPING CONTAINERS SHALL BE MARKED IN ACCORDANCE WITH MIL-S-1279 AND SHALL INCLUDE THE NASA DRAWING NUMBER, REVISION LETTER AND DASH NUMBER.
   C. THERMAL SHOCK: UNITS SHALL BE CAPABLE OF WITHSTANDING A THERMAL SHOCK IN SILICON OTL FROM 4° TO DEGREES CENTIGRADE TO PLUS 200 DEGREES CENTIGRADE.

3. DESIGN:
   A. ABSOLUTE MAXIMUM RATINGS:
      (1) POWER DISSIPATION: 500 MILLIWATTS AT 25 DEGREES CENTIGRADE.
      (2) JUNCTION TEMPERATURE (T(J)): FROM MINUS 65 DEGREES TO PLUS 175 DEGREES CENTIGRADE.
      (3) STORAGE TEMPERATURE (T(STG)): FROM MINUS 65 DEGREES TO PLUS 200 DEGREES CENTIGRADE.
      (4) PEAK FORWARD SURGE CURRENT (I(FSMP)): 1 AMPERE FOR 1 SECOND MINIMUM, REPEATED 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 OTL FROM MINUS 65 DEGREES CENTIGRADE TO PLUS 200 DEGREES CENTIGRADE FOR 5 COMPLETE CYCLES. TOTAL ELAPSED TIME BETWEEN HALF CYCLE SHALL BE 30 SECONDS.

4. MATERIALS:
   A. ABSOLUTE MAXIMUM RATINGS:
      (1) POWER DISSIPATION: 500 MILLIWATTS AT 25 DEGREES CENTIGRADE.
      (2) JUNCTION TEMPERATURE (T(J)): FROM MINUS 65 DEGREES TO PLUS 175 DEGREES CENTIGRADE.
      (3) STORAGE TEMPERATURE (T(STG)): FROM MINUS 65 DEGREES TO PLUS 200 DEGREES CENTIGRADE.
      (4) PEAK FORWARD SURGE CURRENT (I(FSMP)): 1 AMPERE FOR 1 SECOND MINIMUM, REPEATED 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 OTL FROM MINUS 65 DEGREES CENTIGRADE TO PLUS 200 DEGREES CENTIGRADE FOR 5 COMPLETE CYCLES. TOTAL ELAPSED TIME BETWEEN HALF CYCLE SHALL BE 30 SECONDS.

5. PACKAGING AND PACKING:
   A. UNITS SHALL SHOW NO PHYSICAL DAMAGE OR LACK OF ELECTRICAL PERFORMANCE AFTER THERMAL SHOCK.
TABLE 1
ELECTRICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>CONDITIONS</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>REVERSE CURRENT</td>
<td>I&lt;sub&gt;r&lt;/sub&gt;</td>
<td>V&lt;sub&gt;r&lt;/sub&gt; = 25 VOLTS MIN</td>
<td>50 NANOAMPS</td>
</tr>
<tr>
<td>2</td>
<td>REVERSE BREAKDOWN VOLTAGE</td>
<td>V&lt;sub&gt;r&lt;/sub&gt;</td>
<td>I&lt;sub&gt;r&lt;/sub&gt; = 10 mA</td>
<td>30 VOLTS</td>
</tr>
<tr>
<td>3</td>
<td>REVERSE RECOVERY TIME (SEE TEST CIRCUIT FIGURE 1)</td>
<td>t&lt;sub&gt;&lt;sup&gt;r&lt;/sub&gt;&lt;/sup&gt;</td>
<td>I&lt;sub&gt;&lt;sup&gt;r&lt;/sub&gt;&lt;/sup&gt; = 100 uA</td>
<td>8 NANOSECONDS</td>
</tr>
<tr>
<td>4</td>
<td>FORWARD VOLTAGE DROP</td>
<td>V&lt;sub&gt;f&lt;/sub&gt;</td>
<td>I&lt;sub&gt;f&lt;/sub&gt; = 40 mA</td>
<td>.750 VOLTS</td>
</tr>
<tr>
<td>5</td>
<td>FORWARD VOLTAGE DROP</td>
<td>V&lt;sub&gt;f&lt;/sub&gt;</td>
<td>I&lt;sub&gt;f&lt;/sub&gt; = 400 mA</td>
<td>1.25 VOLTS</td>
</tr>
<tr>
<td>6</td>
<td>CAPACITANCE</td>
<td>C</td>
<td>V&lt;sub&gt;c&lt;/sub&gt; = 0 VDC</td>
<td>3.5 PICOFARADS</td>
</tr>
<tr>
<td>7</td>
<td>REVERSE CURRENT</td>
<td>I&lt;sub&gt;r&lt;/sub&gt;</td>
<td>AT 150°C V&lt;sub&gt;r&lt;/sub&gt; = 20 VOLTS MIN</td>
<td>30 MICROAMPS</td>
</tr>
</tbody>
</table>

NOTE: USING TECHTRONIC'S UNIT MEASURE STORED CHARGE UNDER FOLLOWING CONDITIONS: I<sub>f</sub> = 5mA; I<sub>r</sub> = 100 uA; t<sub><sup>r</sub></sup> = max 0.5 u sec.