REQUIREMENTS:

1. GENERAL:
   A. Units shall meet the general specification requirements of MIL-S-19500 except as modified herein.
   B. Suppliers shall conform to the quality assurance provisions of MIL 101540, CLASS 2.
   C. Units shall be capable of meeting the qualification requirements of ND1002054.
   D. Unit packaging and packing shall be in accordance with MIL-P-19491, LEVEL A.
   E. Interpret drawing in accordance with standards prescribed by MIL-D-70327.

2. INSPECTION & ACCEPTANCE:
   A. Mechanical requirements:
      (1) Leads: Leads shall be iron-nickel alloy (DUMET) per MIL 1015401. Certification of compliance with this requirement shall accompany each shipment.
      (2) Marking: Unit packages shall be marked per MIL-STD-129 with the manufacturer's name and symbol, type designation, NASA Drawing Number, Revision Letter, Dash Number, and Lot Code Identification. The diodes shall be marked only with color coded identifying bands in accordance with MIL-S-19500 and MIL-STD-176.
   B. Electrical characteristics per Table 1:
      (1) Zener voltage (Vz)
      (2) Zener Supercapacitor (zsc)
      (3) Leakage Current (I0, I1)
   C. Design requirements:
      (1) Power Dissipation: 400 Milliwatts (See derating curve).
      (2) Storage Temperature: -65°C to +150°C.
      (3) Operating Temperature: -65°C to +150°C.
      (4) Temperature Coefficient: T=0.002%/°C at a Zener Current of 7.5 mA over the temperature range of -55°C to +100°C. Tref = 25°C.
      (5) Enclosure: Glass, hermetically sealed.

3. Special conditioning by supplier:
   A. Units shall be burned in for 240 hours at the following conditions:
      (1) Ambient temperature 100°C ± 5°C at Zener current of 15 mA.
   B. The manufacturer shall record the electrical characteristics per Table 1 prior to and following burn in. Data shall be supplied with the parts.
   C. Parametric change limits:
      (1) Zener Voltage: ±1% of initial measured value.
      (2) Zener Supercapacitor: ±5% of initial measured value. (zsc) ±1% of initial measured value or 1 Ohm which ever is greater.
      (3) Leakage Current: Shall not exceed 10% of initial measured value or to microamperes, whichever is greater.
   D. Units which fail to meet all initial requirements or which exceed the specified limits for parametric changes following burn in shall not be shipped.

PRODUCE ONLY FROM APPROVED SOURCES LISTED ON NO 1002034 FOR THIS DRAWING.

© REPLACES REV A WITH CHANGES.
### TABLE I

**ELECTRICAL CHARACTERISTICS AT AMBIENT TEMPERATURE = 25°C (UNLESS OTHERWISE SPECIFIED)**

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>&quot;V&quot; CONDITIONS</th>
<th>SYMBOL</th>
<th>SPECIFICATION LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZENER VOLTAGE</td>
<td>Z_T = 7.5 mA</td>
<td>( V_Z )</td>
<td>5.9 ± 0.5 VOLTS</td>
</tr>
<tr>
<td>ZENER IMPEDANCE</td>
<td>Z_T = 7.5 mA</td>
<td>( Z_T )</td>
<td>10 ± 0.5 OHMS</td>
</tr>
<tr>
<td>ZENER IMPEDANCE</td>
<td>Z_K = 1 κΩ</td>
<td>( Z_K )</td>
<td>150 ± 0.5 OHMS</td>
</tr>
<tr>
<td>LEAKAGE CURRENT</td>
<td>V_T = 5.0 VOLTS</td>
<td>( I_{LT} )</td>
<td>10 ± 0.5 mA</td>
</tr>
<tr>
<td>LEAKAGE CURRENT</td>
<td>V_T = 5.0 VOLTS</td>
<td>( I_{LT} )</td>
<td>150 ± 0.5 mA</td>
</tr>
</tbody>
</table>

#### DERATING CURVE

![Derating Curve Graph](image)

(T_a) AMBIENT TEMP (°C)

DERATING CURVE

**NOTES**

- Dimensions are in inches.
- Tolerances on fractions and decimals are ±0.005.
- Angles are in degrees.
- Do not scale this drawing.

**MANNED SPACECRAFT CENTER**

HOUSTON, TEXAS

**SEMICONDUCTOR DEVICE, DIODE**

**SPEECIFICATION CONTROL DRAWING**

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**REPLACES REV. A WITH CHANGES**

**MANDATORY DRAWING CHANGES**

- **DATE**
- **APPROVAL**
- **SIGNATURE**

**INSTRUCTIONS**

- **INCHES**
- **PHOTOGRAPHIC SCALE ONLY**

**LIST OF MATERIALS**

- **QTY**
- **PART OR IDENTIFYING NO.**
- **NOMENCLATURE OR DESCRIPTION**
- **FINI NO.**

**MASTER**

- **INCHES**
- **PHOTOGRAPHIC SCALE ONLY**