1. GENERAL:
A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-752.
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 ND 1015404, CLASS 2.
D. UNITS SHALL BE CAPABLE OF MEETING THE QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1062054.
E. SHIPMENT LOTS MUST MEET THE ACCEPTANCE REQUIREMENTS OF ND 1002264. PROCESSING IN ACCORDANCE WITH ND 1002264 SHALL BE PERFORMED AT THE BUYER'S PLANT. LOTS NOT MEETING THE ACCEPTANCE CRITERIA OF ND 1002264 SHALL BE REJECTED TO THE VENDOR.
F. PACKAGING AND PACKING: UNITS PACKAGING AND PACKING SHALL BE IN ACCORDANCE WITH MIL-S-19491 LEVEL B, IN BOTH INSTANCES.

2. ACCEPTANCE AND INSPECTION:
A. ELECTRICAL CHARACTERISTICS: PER TABLE 1.
   (1) ITEMS 1 THRU 4: 100 PERCENT INSPECTION.
   (2) ITEMS 6 AND 7: SAMPLE IN ACCORDANCE WITH MIL-STD-105, INSPECTION LEVEL 2, AOQ OF 4 PERCENT.
B. MECHANICAL PROPERTIES:
   (1) DIMENSIONS: PER OUTLINE, SAMPLE IN ACCORDANCE WITH MIL-STD-105, INSPECTION LEVEL 1, AOQ OF 4 PERCENT.
   (2) MARKING: UNITS SHALL BE MARKED IN ACCORDANCE WITH MIL-S-19500 AND INCLUDE THE NASA DRAWING NUMBER, REVISION LETTER AND DASH NUMBER.
   (3) LEAD MATERIAL: A CERTIFICATE OF COMPLIANCE SHALL ACCOMPANY EACH SHIPMENT. LEAD MATERIAL SHALL BE END-TO-END LOW-NICKEL ALLOY PER PS 1015401.

3. DESIGN:
A. ABSOLUTE MAXIMUM RATINGS:
   (1) POWER DISSIPATION: 350 MILLIWATTS AT 25 DEGREES CENTIGRADE AMBIENT TEMPERATURE.
   (2) JUNCTION TEMPERATURE (TJ): FROM MINUS 50 DEGREES CENTIGRADE TO PLUS 150 DEGREES CENTIGRADE CONTACTS 3/4 FROM BODY.
   (3) STORAGE TEMPERATURE (TSTG): FROM MINUS 65 DEGREES CENTIGRADE TO PLUS 200 DEGREES CENTIGRADE.
   (4) PEAK FORWARD SURGE CURRENT (IF): 1.5 AMPERE FOR 1 SECOND MINIMUM, REPEATED DUTY CYCLE OF 1 PERCENT.
B. CONSTRUCTION: PLANAR SILICON WITH OXIDE PASSIVATION, CLEAN UNPAINTED GLASS, HERMETICALLY SEALED ENCLOSED.
PRODUCE ONLY FROM APPROVED SOURCES LISTED IN ND 1002014 FOR THIS DRAWING.

MATERIAL

SEMICONDUCTOR DEVICE, DIODE
SILICON PLANAR, OXIDE PASSIVATED
SPECIFICATION CONTROL DRAWING

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CARCATOR VALUES ARE IN OHMS
FRACTIONS DECADES ANGLES
DO NOT SCALE THIS DRAWING

OCT NO. PART NO. INSNICATION LAB.
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SEMICONDUCTOR DEVICE, DIODE
SILICON PLANAR, OXIDE PASSIVATED
SPECIFICATION CONTROL DRAWING

LIST OF MATERIALS

BROOKLYN BLUE PRINT CO. D-19550
### Table 1: Electrical Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Limits</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reverse Current</td>
<td>I_r</td>
<td>Vp = 60 Volts Min</td>
<td>-</td>
<td>100 Microamps</td>
</tr>
<tr>
<td>2</td>
<td>Reverse Breakdown Voltage</td>
<td>V_B</td>
<td>Ip = 100 mA</td>
<td>70</td>
<td>Volts</td>
</tr>
<tr>
<td>3</td>
<td>Reverse Recovery Time</td>
<td>t_R</td>
<td>Ip = 40 mA</td>
<td>-</td>
<td>10 Nanoseconds</td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
<tr>
<td>4</td>
<td>Forward Voltage Drop</td>
<td>V_f</td>
<td>Ip = 40 mA, Rise Time ≤ 100 Nanosec, Duty Cycle ≤ 1%, See Fig. 1</td>
<td>0.750</td>
<td>0.850 Volts</td>
</tr>
<tr>
<td>5</td>
<td>Forward Voltage Drop</td>
<td>V_f</td>
<td>Ip = 40 mA, Rise Time ≤ 100 Nanosec, Duty Cycle ≤ 1%, See Fig. 2</td>
<td>1.35</td>
<td>Volts</td>
</tr>
<tr>
<td>6</td>
<td>Capacitance</td>
<td>C</td>
<td>Vp = 1 VDC, f = 1 MHz</td>
<td>10</td>
<td>Picofarads</td>
</tr>
<tr>
<td>7</td>
<td>Reverse Current</td>
<td>I_r</td>
<td>At 150°C, Vp = 50 Volts Min</td>
<td>50</td>
<td>Microamps</td>
</tr>
</tbody>
</table>

### Figure 1: Test Circuit - Reverse Recovery Time

![Test Circuit Diagram](image)

1. **Pulse Generator**: 50 Ohms
2. **Diode Under Test**: Ip = 10 mA
3. **Sampling Scope**: 50 Ohms
4. **Attenuator**: 6 dB, 50 Ohms

**Technical Specifications**

- **Capacitor Values**: In uf
- **Resistor Values**: In Ohms
- **Tolerances**: ±5%
- **Fractions**: Decimals
- **Angles**: Degrees
- **Material**: Silicium Planar, Oxide Passivated

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**List of Materials**

- **Semiconductor Device, Diode**
- **Manned Spacecraft Center**
- **Instrumentation Lab**

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**Drawing Information**

- **Drawing Number**: 1006399
- **Drawing Title**: Test Circuit - Reverse Recovery Time
- **Drawing Code**: B0230
- **Revision**: C
- **Control Number**: 1006399

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**Technical Notes**

- **Drawn By**: [Name]
- **Checked By**: [Name]
- **Approved By**: [Name]