C. VENDOR SUPPLIED INFORMATION: THE FOLLOWING DATA AND INFORMATION IS TO BE SUPPLIED WITH EACH SHIPMENT. ALL INFORMATION SUPPLIED WILL REFERENCE THE UNIT PART NUMBER, APPLICABLE PURCHASE ORDER NUMBER, QUANTITY AND DATE OF SHIPMENT, AND THE APPLICABLE DATE CODES OR DIFFUSION LOT CODES.

(1) A CERTIFICATE OF COMPLIANCE COVERING LEAD MATERIAL REQUIREMENTS OF PARAGRAPH 6.C.(3).

(2) A CERTIFICATE OF COMPLIANCE COVERING THE REQUIREMENTS OF HD 1015406.

(3) THE ACTUAL LEAD DIMENSIONS AS REQUIRED BY PARAGRAPH 6.E.

(4) THE PRE-SEAL INSPECTION DATA REQUIRED BY PARAGRAPH 6.C.

(5) THE SUBGROUP 1 AND 3 TEST DATA REQUIRED BY TABLE 11. A SUMMARY OF TEST RESULTS OF SUBGROUP 145, INCLUDING THE NUMBER OF UNITS TESTED AND NUMBER OF FAILURES Found, SHALL BE SUBMITTED WITH EACH SHIPMENT LOT.

D. SELECTION OF UNITS FOR TEST:

(1) THE SAMPLE USED FOR TABLE 11 SHALL BE RANDOMLY SELECTED FROM THE ENTIRE GROUP OF UNITS WHICH CONSTITUTE A SHIPMENT LOT.

(2) A SHIPMENT LOT MAY BE RESUBMITTED FOR TABLE 11 SUBGROUP 145, THE REQUIREMENT OF MIL-S-19500 GROUP 145 FOR LOT RESUBMITTAL SHALL BE AID TO THE TESTED SAMPLES.

E. PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH HD 1002215, CLASS 1, CODE 2.

(1) MARKING OF SHIPPING CARRIERS SHALL CONFORM TO THE MARKING OF UNIT AND INTERMEDIATE PACKAGES AND THE METHODS OF MARKING AS SPECIFIED IN HD 1002215.

F. THE SHIPMENT LOT, MADE UP OF UNITS AS SPECIFIED IN THIS DRAWING, MUST MEET THE REQUIREMENTS OF HD 1015406, WHEN PROCESSED AS SPECIFIED IN HD 1002248, PERFORMED AT THE DOCUMENTED LIMITS RECORDED BY THE CRITERIA OF PARA. 3.B.3 OF HD 1002248, SHALL BE RETURNED TO THE VENDOR.

2. ACCEPTANCE AND INSPECTION: QUALITY ASSURANCE PROVISIONS PER TABLES I AND II

A. DEFINITIONS:

(1) A SHIPMENT LOT IS DEFINED AS A GROUP OF PARTS ASSEMBLED FROM DIFFUSION SUB-LOTS AND DATE CODES WHICH HAVE BEEN FABRICATED IN A SINGLE CONTINUOUS PRODUCTION RUN USING LIKE MATERIALS WHICH ARE CONTROLLED USING A CONTROLLED PROCESS. NO PROCESS CHANGES DEFINED AS CRITICAL, BY HD 1015406, SEQUENCE OF DESIGN CHANGES MAY BE CHANGED DURING THE FABRICATION OF A SHIPMENT LOT. MAXIMUM NUMBER OF UNITS SHIPPED IN A LOT SHALL BE 5,000. A MAXIMUM OF 100 DIFFUSION SUB-LOTS MAY BE USED TO ASSEMBLE ONE SHIPMENT LOT. A SHIPMENT LOT MAY INCLUDE MORE THAN ONE DATE CODE LOT.

(2) A DIFFUSION SUB-LOT IS DEFINED AS A GROUP OF PARTS FABRICATED FROM MATERIALS WHICH WERE PROCESSED THROUGH DIFFUSION MASKING, ETCHING AND METALLIZATION AT ONE TIME, OR SINGLE DATING. THIS SUB-LOT IDENTIFICATION MUST BE MAINTAINED THROUGH SUBSEQUENT STAGES OF ASSEMBLY AND TEST. A DIFFUSION SUB-LOT SHALL BE SEALED WITH ONLY ONE DATE CODE.

(3) A DATE CODE LOT IS DEFINED AS THOSE UNITS SEALED DURING ONE WEEK.

B. TEST CONDITIONS:

(1) THE TESTS AS DEFINED IN TABLES I & II SHALL BE PERFORMED BY THE QUALITY CONTROL DEPARTMENT OF THE VENDOR.

(2) UNLESS OTHERWISE SPECIFIED HEREIN ALL ELECTRICAL TESTS MUST BE REFERENCED TO AN AMBIENT TEMPERATURE OF PLUS OR MINUS 1/2 DEGREE CENTIGRADE.

(3) THE PRE-SEAL TEST PER TABLE 3(0) SHALL BE PERFORMED AFTER THE FINAL PRODUCTION INTERNAL VISUAL INSPECTION AND PRIOR TO SEALING.

PROCURE ONLY FROM APPROVED SOURCES LISTED IN HD 1002248 FOR THIS DRAWING.
2. **LEAD DIMENSIONS:** The parts supplied in any shipment lot must be uniform with respect to lead dimensions. The lead thickness shall be within ±0.0005 inches of a nominal value to be specified by the vendor. The lead width shall be within ±0.001 inches of a nominal value also to be supplied. The nominal values for each shipping lot will be supplied with the applicable shipment.

3. **DESIGN:**
   - **A.** Absolute maximum ratings at 25°C ambient:
     1. Pin 10 connected to N substrate, beneath resistors.
     2. Voltage applied to any input pin plus or minus 4 volts with respect to pin 9.

4. **TEMPERATURE:**
   - **A.** Temperature range, junction, operating: -55°C to +125°C.
   - **B.** Temperature range, junction, storage: -65°C to +150°C.
   - **C.** Temperature, soldering leads: +250°C (1 minute max).

5. **CONSTRUCTION:**
   - **A.** Semiconductor: Silicon, NPN.
   - **B.** Enclosure: A hermetically sealed package electrically isolated from power or ground, the dimensions of which meet the requirements of Figure 1 and Paragraph 2.E.
   - **C.** Leads:
     - Lead material shall be in accordance with NASA Document PS 1015402 with the following exceptions:
       1. Gold plate shall be a minimum of 100 and a maximum of 200 micro inches. The nickel strike under the gold shall be optional but if used shall be a maximum of 100 micro inches, and Paragraph 3.4.2 shall not apply.
       2. Certificate of compliance for lead material shall accompany each lot shipped.

6. **TEST METHODS:** (Ref. MIL-STD-750 with exceptions noted below).
   - **A.** Average propagation delay (τp): Measurements shall be performed on each input using test circuit specified in Figure 2 made up of acceptable units where τp = (τp + τg) / 2. Voltage 4V ±10% during test all unused bases shall be grounded.
B. VISUAL AND MECHANICAL EXTERNAL EXAMINATION UNDER 10X AND 80X MAGNIFICATION:
Markings shall be legible. The case finish shall have no flaking, spattering, chipping or holes. The glass or ceramic shall have no seal impairing cracks. Re-entrance at the glass, ceramic or solder seal shall not extend to over 50% of the seal width. No foreign matter shall be in or on the seal interface. Leads shall be free from kinks and nicks and shall maintain a uniform thickness within lead specifications. The units shall comply with the specified lead material requirement. Lead section (A) may be cut from the lead preform and shall not be subjected to physical examination. No body paint shall be on the leads or package seal area.

C. PRESEAL VISUAL INSPECTION: The preseal visual inspection shall be performed using the rejection criteria of MIL-STD-751. The diffusion sublot shall be utilized for sampling specified in Table I. Data shall accompany each shipment covering the number of sub-lots tested, the number of units that failed from each sub-lot, the cause of failure, and the number of times each sub-lot was resubmitted to Table I test.
## Table II

### Acceptance Inspection **

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Test Condition</th>
<th>Limits</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>VISUAL AND MECHANICAL EXAMINATION</td>
<td>-</td>
<td>METHOD 2071 SEE PARAGRAPH (4.B)</td>
<td>-</td>
</tr>
<tr>
<td>BASE CURRENT (2.7K)</td>
<td>PIN 2.6</td>
<td>PIN 3.7</td>
<td>PIN 4.8</td>
</tr>
<tr>
<td>BASE CURRENT (2.7K)</td>
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<td>+180010 mV</td>
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</tbody>
</table>

### Subgroup 2

<table>
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<tr>
<th>Collect Cutoff Current</th>
<th>Collector Cutoff Current</th>
<th>Emitter Cutoff Current</th>
<th>Base Current (4.15K)</th>
<th>COLLECTOR-EMITTER VOLTAGE</th>
<th>Ave. Prop. Delay</th>
<th>COLLECTOR TO POWER PIN</th>
<th>D.C. CURRENT GAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCC</td>
<td>OPEN</td>
<td>OPEN</td>
<td>OPEN</td>
<td>OPEN</td>
<td>+52.1 V</td>
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<td>24</td>
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<tr>
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<td>AO</td>
<td>AO</td>
<td>AO</td>
<td>AO</td>
<td>+42.1 V</td>
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<td>100</td>
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<td>AO</td>
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<td>AO</td>
<td>+8702 mV</td>
<td>OPEN</td>
<td>100</td>
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<td>AO</td>
<td>+8702 mV</td>
<td>OPEN</td>
<td>100</td>
</tr>
</tbody>
</table>

### Notes
- LTD = PER MIL-5-1950C, TABLE IV
- **Simple size used by the buyer and vendor shall be the same and shall correspond to the max acc number spesified in MIL-5-1950C, TABLE IV.
- Measurements to be made on Gate 1 and Gate 2.
- **Tektronix sampling probe 612Z with 615 attenuator.
- **Test to be performed in sequence indicated.
- 2.7K 1% resistor from Pin 1 to +420.01 V
- 4.15K 1% resistor from Pin 1 to +420.01 V