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NOTES:

1. GENERAL REQUIREMENTS:
   A. UNIT SHALL BE IN ACCORDANCE WITH MIL-S-19500 IN ADDITION TO THE REQUIREMENTS HEREIN.
   B. ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT:
      (1) VOLTAGE TO PIN 8: PLUS 10.0 VOLTS WITH RESPECT TO PIN 4.
      (2) VOLTAGE APPLIED TO ANY INPUT PIN (1,3, OR 5): PLUS OR MINUS 4 VOLTS WITH RESPECT TO PIN 4.
      (3) THERMAL RESISTANCE, JUNCTION-CASE, (θJC): 200°C/WATT.
      (4) THERMAL RESISTANCE, JUNCTION-AMBIENT, (θJA): 500°C/WATT.
   C. TEMPERATURE:
      (1) TEMPERATURE RANGE, JUNCTION, OPERATING: -55°C TO +125°C.
      (2) TEMPERATURE RANGE, JUNCTION, STORAGE: -65°C TO +150°C.
      (3) TEMPERATURE, SOLDERING LEADS: +250°C (1 MINUTE MAX).
   D. MARKING: UNITS SHALL BE MARKED IN ACCORDANCE WITH STANDARD MIL-STD-130, WITH THE MANUFACTURER'S IDENTIFICATION, DATE CODE, AND THE NUMBER 771. THE NASA DRAWING NUMBER AND REVISION LETTER SHALL BE MARKED ON EACH INTERIOR AND EXTERIOR SHIPPING CONTAINER AS WELL AS ON A TAG TO BE INCLUDED IN EACH SHIPPING CONTAINER.

2. CONSTRUCTION REQUIREMENTS:
   A. SEMICONDUCTOR: SILICON, NPN.
   B. ENCLOSURE: METAL CASE WITH GLASS HEADER, HERMETICALLY SEALED, REF. JEDEC (TO-47) OUTLINE.
   C. LEADS: LEAD MATERIAL SHALL BE IN ACCORDANCE WITH NASA DOCUMENT PS 1015420. A CERTIFICATE OF COMPLIANCE FOR LEAD MATERIAL SHALL ACCOMPANY EACH LOT SHIPPED.
   D. PIN 4 SHALL BE ELECTRICALLY CONNECTED TO THE CASE. PIN MAY BE WELDED TO HEADER.

3. QUALITY ASSURANCE REQUIREMENTS:
   A. LOT: A LOT IS DEFINED AS A GROUP OF PARTS IN A SINGLE PROCUREMENT SELECTED FROM A SINGLE CONTINUOUS PRODUCTION RUN USING LIKE MATERIALS WHICH ARE CONTROLLED USING A PROCESS WHICH IS THE SAME FROM THE BEGINNING TO THE END OF THE RUN. MAXIMUM NUMBER OF UNITS IN ANY LOT WILL BE 5000 UNITS.
   B. INSPECTION CONDITIONS: UNLESS OTHERWISE SPECIFIED HEREIN ALL ELECTRICAL TESTS SHALL BE MADE AT AN AMBIENT TEMPERATURE OF PLUS 25 PLUS OR MINUS 1/2 DEGREE CENTIGRADE.
   C. ACCEPTANCE INSPECTION: PER TESTS IN TABLES I, II, AND III AS INDICATED BELOW.
      (1) THE PRE-ELECTRICAL TEST PROCESSING DEFINED IN TABLE I SHALL BE PERFORMED IN THE SEQUENCE INDICATED BEFORE THE TESTS OF TABLE II ON ALL LOTS NUMBERING LESS THAN 501 UNITS.
      (2) UNITS USED IN QUALITY DEMONSTRATION TESTS OF TABLE III WILL NOT BE SHIPPED AS PART OF THE DELIVERY SCHEDULE BUT WILL BE FORWARDED ALONG WITH TEST DATA UNDER SEPARATE COVER, TO THE PURCHASER, ATTENTION: RELIABILITY MANAGER.
      (3) UNITS USED IN TABLE III, SUBGROUPS 1 AND 5 MAY BE ELECTRICAL REJECTS FROM THE SAME LOT.
      (4) ACCEPTABLE UNITS USED IN TESTING SUBGROUP 2 OF TABLE II SHALL BE USED IN SUBGROUPS 2, 3, AND 4 OF TABLE III. IN TABLE III ACCEPTABLE UNITS FROM SUBGROUP 2 ARE USED IN SUBGROUP 4.
      (5) AFTER COMPLETION OF TESTS, UNITS USED IN SUBGROUP 4 OF TABLE III SHALL BE USED IN SUBGROUP 6 OF TABLE III.

REPLACES REV G WITH CHANGES AND UPGRADED TO CLASS A RELEASE PER TDRR OCSLZ
NOTES (CONTINUED):

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1. D. TEST METHODS: (Ref. MIL-STD-750 with exceptions noted below).

(1) LEAD FATIGUE: LEADS SHALL BE CAPABLE OF WITHSTANDING THE FOLLOWING LEAD BEND TEST. THE UNIT SHALL BE HELD IN A VERTICAL POSITION WITH A ONE POUND WEIGHT HUNG FROM THE LEAD TO BE TESTED. TWO CYCLES OF BENDING SHALL BE PERFORMED, A CYCLE CONSISTING OF MOVING THE BODY OF THE UNIT, NO DEGREES FROM THE ORIGINAL VERTICAL ANGLE, AND BACK 90 DEGREES TO THE ORIGINAL POSITION. NO MECHANICAL DAMAGE SHALL BE EVIDENT AFTER THE TEST.

(2) LEAD TENSION: EACH LEAD SHALL BE CAPABLE OF WITHSTANDING AN AXIAL PULL OF 1/8 POUNDS MINIMUM FOR 30 SECONDS. NO MECHANICAL DAMAGE SHALL BE EVIDENT AFTER THE TEST.

(3) SEAL TEST: THE UNITS SHALL BE SUBJECTED TO A HELIUM OR RADIOLUDE LEAK DETECTION TEST WITH A SENSITIVITY OF AT LEAST 1 X 10⁻⁷ CC/ATM/SEC. A LEAKAGE RATE OF 1 X 10⁻⁵ CC/ATM/SEC OR GREATER SHALL CONSTITUTE A FAILURE.

(4) AVERAGE PROPAGATION DELAY (T_p): MEASUREMENTS SHALL BE PERFORMED ON ANY ONE OF THE OUTPUT LEADS OF THE UNIT. VOLTAGE PINS 8 TO PIN 4, V = 10%.

T_P = (T_1 + T_2)/2

WHERE T_P = (T_1 + T_2)/2. VOLTAGE PIN 8 TO PIN 4, 3 V ± 10%.

(5) POVER BURN-IN: AN ODD NUMBER OF UNITS (GATES) SHALL BE CONNECTED IN SERIES WITH THE OUTLET OF THE LAST UNIT SUPPLYING THE INPUT TO THE FIRST UNIT, WITH A RATING OF 1 X 10⁻⁷ CC/ATM/SEC OR GREATER SHALL CONSTITUTE A FAILURE.

(6) VISUAL AND MECHANICAL EXAMINATION: MARKING SHALL BE LEGIBLE, THE CASE FINISH SHALL HAVE NO PITTS, FLAKING OR CHIPPING, LEADS SHALL BE FREE FROM MECHANICAL ABRASION OR CHEMICAL REACTION WITH CONTAMINATE SUBSTANCES. DEFECTS IN THE METALIZATION WILL BE CAUSE FOR REJECTION.

4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
TABLE III  PRODUCTION TESTS

<table>
<thead>
<tr>
<th>TEST</th>
<th>TEST CONDITION</th>
<th>LOT</th>
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</thead>
<tbody>
<tr>
<td>S. 2</td>
<td>SEE NOTE 3 C (3)</td>
<td>1 TO 500</td>
</tr>
<tr>
<td>PHYSICAL DIMENSION</td>
<td>METHOD 2066</td>
<td>NO REQUIREMENTS</td>
</tr>
<tr>
<td>MAX ACC NO. = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. 2</td>
<td>SEE NOTE 3 C (4)</td>
<td>1 TO 500</td>
</tr>
<tr>
<td>THERMAL SHOCK</td>
<td>METHOD 1091, CONDITION B</td>
<td>NO REQUIREMENTS</td>
</tr>
<tr>
<td>(150°F to -40°C, 5 CYCLES)</td>
<td>(COMBINED)</td>
<td>MAX ACC NO. = 3</td>
</tr>
<tr>
<td>SEAL TEST</td>
<td>SEE NOTE 3 D (3)</td>
<td></td>
</tr>
</tbody>
</table>

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** TEST TO BE PERFORMED IN SEQUENCE INDICATED

** END POINTS FOR SUBGROUPS 3, 4 AND 6

<table>
<thead>
<tr>
<th>TEST</th>
<th>SYMBOL</th>
<th>CONDITIONS</th>
<th>LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTPUT VOLTAGE, PIN 7</td>
<td>V0</td>
<td>SAME AS</td>
<td>- 350 mW</td>
</tr>
<tr>
<td>OUTPUT VOLTAGE, PIN 7</td>
<td>V0</td>
<td>SPECIFIED</td>
<td>- 350 mW</td>
</tr>
<tr>
<td>OUTPUT VOLTAGE, PIN 7</td>
<td>V0</td>
<td>IN TABLE II</td>
<td>- 350 mW</td>
</tr>
<tr>
<td>OUTPUT CURRENT, PIN 7</td>
<td>I0</td>
<td>- 2.40</td>
<td>- mA</td>
</tr>
<tr>
<td>COLLECTOR Emitter THRESHOLD CURRENT</td>
<td>ICEX</td>
<td>- 200</td>
<td>- uA</td>
</tr>
<tr>
<td>BASE CURRENT, Ia</td>
<td>Ia</td>
<td>- 370</td>
<td>- uA</td>
</tr>
<tr>
<td>BASE CURRENT, Ia</td>
<td>Ia</td>
<td>- 370</td>
<td>- uA</td>
</tr>
</tbody>
</table>

REV H THIS SHEET ADDED

FIGURE 2  TEST CIRCUIT —POWER BURN-IN