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H 1010376

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
F	REPLACES REV E WITH CHANGES AND UPGRADED TO CLASS A RELEASE PER TDRR	6-26-63	WJK
G	REVISED PER TDRR 04250	6-24-63	WJK
H	REVISED PER TDRR 04546	11-13-63	WJK

REQUIREMENTS:

1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 1
- C. UNITS SHALL BE CAPABLE OF MEETING ALL THE QUALIFICATION REQUIREMENTS OF ND 1002051, UNLESS MODIFIED OR AMMENDED BY DESIGN REQUIREMENTS SECTION OF THIS DRAWING.
- D. UNIT PACKAGING AND PACKING SHALL BE IN ACCORDANCE WITH MIL-P-19491 LEVEL A.
- E. UNITS SHALL BE IN ACCORDANCE WITH MIL-S-19500 IN ADDITION TO THE REQUIREMENTS SPECIFIED HEREIN.

2. INSPECTION AND ACCEPTANCE:

A. MECHANICAL REQUIREMENTS:

- 1) LEAD DATA: KOVAR WITH GOLD PLATING PER ND1015402
A CERTIFICATE OF COMPLIANCE WITH THIS REQUIREMENT SHALL ACCOMPANY EACH SHIPMENT.
- 2) MARKING: THE NASA DRAWING NUMBER (LAST THREE DIGITS REQUIRED) DASH NUMBER, AND REVISION LETTER; AND THE MANUFACTURER'S NAME, TRADEMARK OR CODE; DATE CODE; LOT

CODE AND SERIAL NUMBER SHALL BE PERMANENTLY AND LEGIBLY MARKED ON THE PART PER ND1002019 MARKING OF UNIT PACKAGES AND EXTERIOR SHIPPING CONTAINERS SHALL BE IN ACCORDANCE WITH MIL-P-19491 AND SHALL INCLUDE THE NASA DRAWING NUMBER AND REVISION LETTER.

3) MECHANICAL DIMENSIONS PER OUTLINE SHOWN.

B. ELECTRICAL REQUIREMENTS: PER TABLE II & III

- 1) COLLECTOR CUTOFF CURRENT (ICBO) AT 100°C
- 2) EMITTER CUTOFF CURRENT (IEBO)
- 3) SWITCHBACK VOLTAGE (LVCEO)
- 4) STATIC FORWARD CURRENT TRANSFER RATIO (hFE)
- 5) STATIC FORWARD CURRENT TRANSFER RATIO, RATIO.
- 6) BASE VOLTAGE DIFFERENTIAL.
- 7) COLLECTOR SATURATION VOLTAGE VCE(SAT)

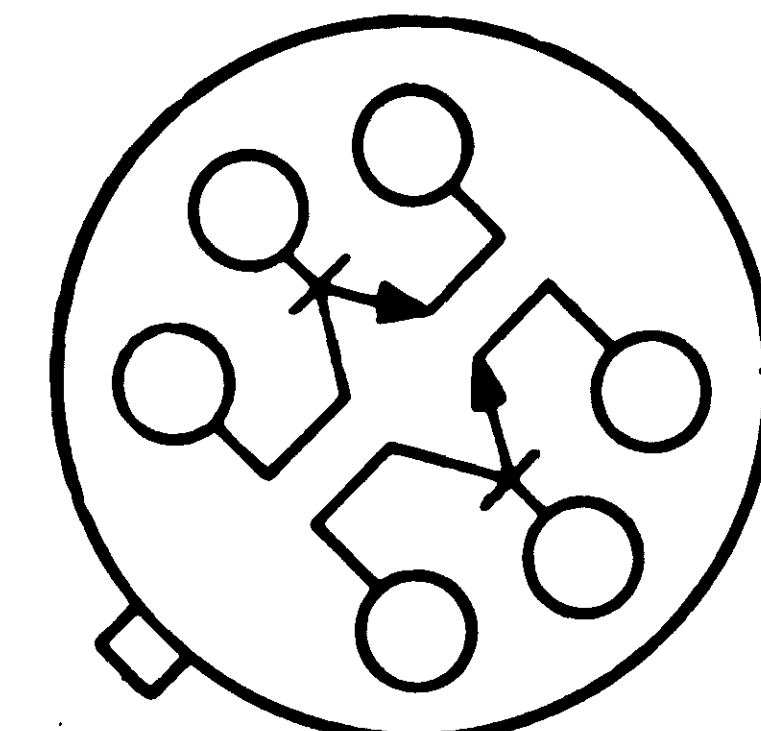
3. DESIGN REQUIREMENTS:

- A. ELECTRICAL RATING: PER TABLE I
- B. ELECTRICAL CHARACTERISTICS: PER TABLES II & III
- C. STORAGE AND OPERATING JUNCTION TEMPERATURE: -65°C TO +200°C
- D. POWER DISSIPATION: (EACH ELEMENT)
 - 1) AT 25°C CASE TEMPERATURE: 1.5 WATTS.
 - 2) AT 100°C CASE TEMPERATURE: 860 MILLIWATTS.
 - 3) AT 25°C AMBIENT TEMPERATURE: 500 MILLIWATTS.
- E. POWER DISSIPATION (DUAL) TOTAL:
 - 1) AT 25°C CASE TEMPERATURE: 3 WATTS.
 - 2) AT 100°C CASE TEMPERATURE: 1.7 WATTS.
 - 3) AT 25°C AMBIENT TEMPERATURE: 600 MILLIWATTS.
- F. LIFE TEST CONDITIONS FOR ND 1002051 SAME AS BURN-IN CONDITIONS.

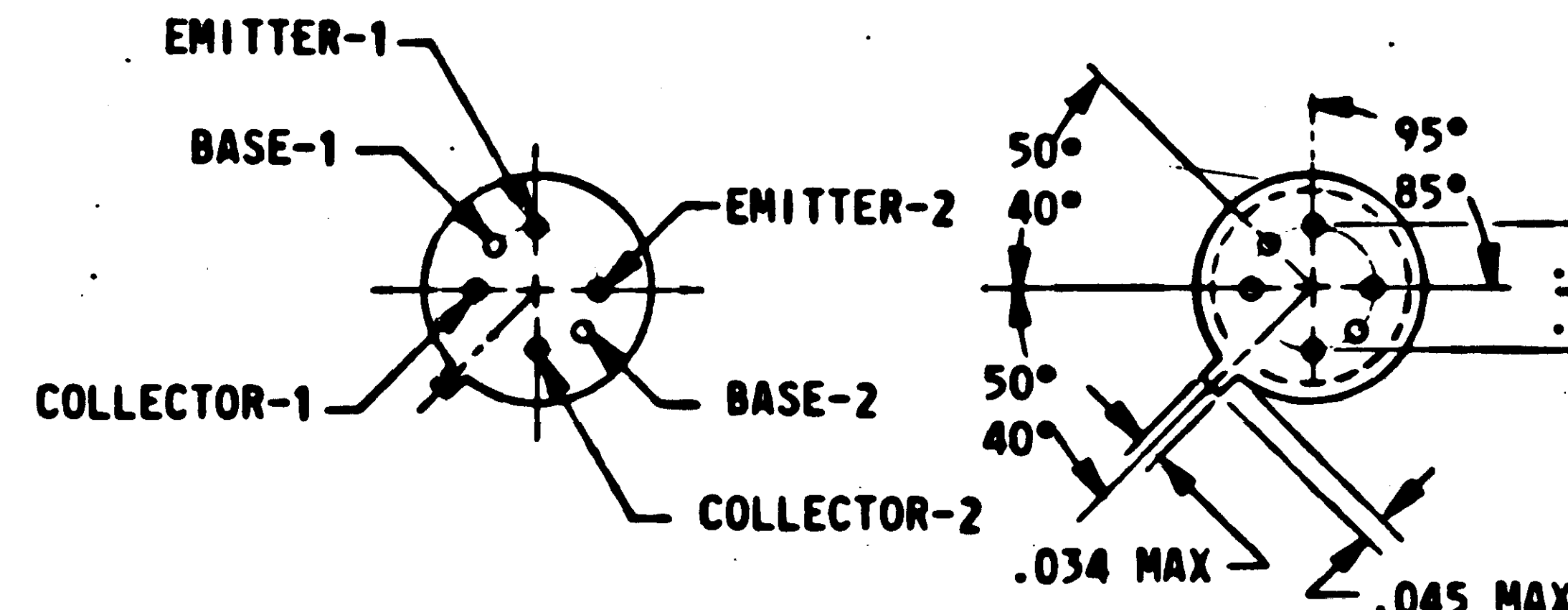
PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND1002034 FOR THIS DRAWING ONLY

4. SPECIAL CONDITIONING BY SUPPLIER:

- A. BURN-IN: UNITS SHALL BE BURNED-IN FOR 240 HOURS AT THE FOLLOWING CONDITIONS:
 - 1. AMBIENT TEMPERATURE: 25° ± 5°C
 - 2. COLLECTOR VOLTAGE VCE: 45 ± 5 VDC PER ELEMENT
 - 3. POWER DISSIPATION: 150 MW ± 10% PER ELEMENT
- B. THE MANUFACTURER SHALL DETERMINE AND RECORD THE FOLLOWING ELECTRICAL CHARACTERISTICS PRIOR TO AND FOLLOWING BURN-IN:
 - 1) EMITTER CUTOFF CURRENT, IEBO.
 - 2) COLLECTOR CUTOFF CURRENT, ICBO.
 - 3) COLLECTOR SATURATION VOLTAGE, VCE(SAT)
 - 4) STATIC FORWARD CURRENT TRANSFER RATIO, hFE. SEE NOTE 3.
- C. THE DATA SHALL BE PRESENTED IN A MANNER THAT PROVIDES POSITIVE IDENTIFICATION OF EACH INDIVIDUAL TRANSISTOR WITH THE INITIAL TEST READING, THE FINAL READING AND THE PERCENT CHANGE BETWEEN THE FINAL AND INITIAL READING. THE TEST DATA SUBMITTED SHALL ALSO IDENTIFY PARTS THAT FAIL TO MEET THE SPECIFIED REQUIREMENTS. HISTOGRAMS SHALL BE PLOTTED TO SHOW THE FREQUENCY DISTRIBUTION OF THE ABSOLUTE VALUE OF EACH CHARACTERISTIC AND TO SHOW THE FREQUENCY DISTRIBUTION OF THE PERCENT CHANGE OF EACH CHARACTERISTIC FROM ITS INITIAL READING. UNITS FAILING TO MEET INITIAL DRAWING REQUIREMENTS OR HAVING CHANGED MORE THAN 20% IN hFE, OR HAVING INCREASED MORE THAN 3 TIMES IN ICBO (THE ABSOLUTE CHANGE MUST BE GREATER THAN 5 NANOAHPERE) SHALL NOT BE ACCEPTABLE.



GRAPHICAL SYMBOL
ELEMENTS INSULATED FROM CASE



H	F	F	G
G	F	F	G
F	F	F	F
SHEET 1	SHEET 2	SHEET 3	SHEET 4

REVISION STATUS OF SHEETS

(F) REPLACES REV(E) WITH CHANGE

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		MIT INSTRUMENTATION LAB CAMBRIDGE, MASS. 02139 CONTRACT # 97 DATE 25 MAY 63		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
		FRACTIONS ±	DECIMALS ±	ANGLES ±	DRAWN <i>[Signature]</i> CHECKED <i>[Signature]</i> 31 MAY 63 APPROVAL <i>[Signature]</i> 25 JUN 63		TRANSISTOR, NPN, SILICON, DUALSECTION
		DO NOT SCALE THIS DRAWING		APPROVAL		SPECIFICATION CONTROL DRAWING	
		MATERIAL		NASA APPROVAL <i>[Signature]</i>		CODE IDENT NO. C	NASA DRAWING NO. 1010376
		HEAT TREATMENT NONE		MIT APPROVAL <i>[Signature]</i> 6-26-63		SCALE NONE	SHEET 1 OF 4
NEXT ASSY	USED ON	FINAL FINISH NONE					
APPLICATION							

