TABLE I. DEVICE PARAMETERS 1/

| JPL PART # ST11794- | GENERIC PART # | MFR | MFR PART # | PKG (INCLUDE EPINS STD TYPE IF DIFFERENT) | DETAIL SCREENING TESTS | ELECTRICAL CHARACTERISTICS & GROUP A TESTS | RADIATION (TID) LEVEL RAD(Si) |
|---|---|---|---|---|---|---|---|
| QN2658TR | 2N2658 | SOD/PPC | 2N2658 | TO-5 2/ | TABLE III | TABLE IV | 1ØØK 3/ |

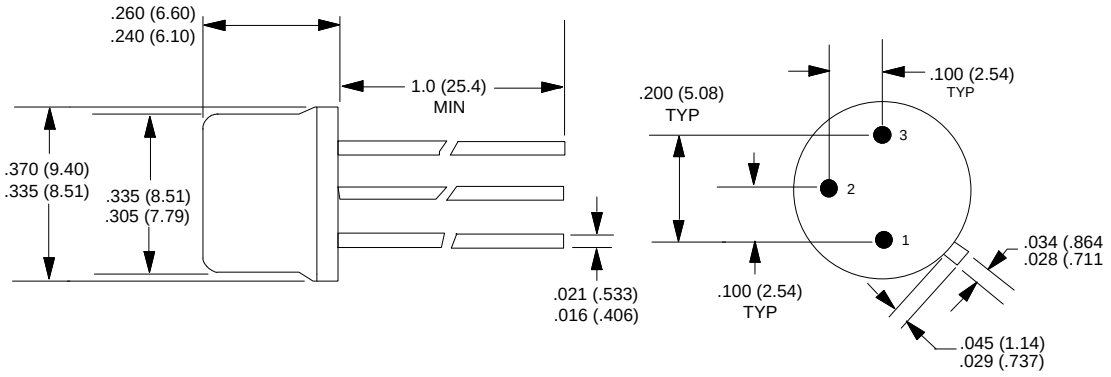
NOTES:

1/ THIS DRAWING, IN CONJUNCTION WITH CS515581, IMPOSES ALL REQUIREMENTS FOR PROCUREMENT OF THESE DEVICES.

2/ PHYSICAL DIMENSIONS SHALL CONFORM TO FIGURE 1.

3/ SUFFICIENT RADIATION TOLERANCE TO THIS TID LEVEL IS GUARANTEED BY DESIGN FOR THIS DEVICE (SEE CS515581, PARAGRAPH 4.7.7).

4. THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN.




DIMENSIONS ARE IN INCHES (MILLIMETERS).

1. EMITTER
2. BASE
3. COLLECTOR

FIGURE 1. PHYSICAL CONFIGURATION

| | | |
|---|---|---|
| RELEASED THRU SECTION 356 DATA MANAGEMENT: | | DATE: |
| REVISION: F | APPROVED BY (Section 514): | DATE: |

APPROVED SOURCE(S)

| VENDOR PART NO. | VENDOR | JPL PART NO. |
|---|---|---|
| 2N2658 | SOLITRON DEVICES, INC<br>RIVIERA BEACH, FL 334Ø4<br>CAGE NO 21845<br><br>PPC PRODUCTS CORP<br>RIVIERA BEACH, FL 334Ø4<br>CAGE NO 33178 | ST11794-QN2658TR |

The item listed in the approved source block and identified by vendor name, address, and part number will be evaluated and tested by the JPL Electronic Parts Reliability Section or its delegated alternate before being approved for use. Non-JPL users shall check with the Electronic Parts Reliability Section on the status of the part's approval before using.

JET PROPULSION LABORATORY CALIFORNIA INSTITUTE OF TECHNOLOGY — CAGE NO. 23835

| | | |
|---|---|---|
| Procurement Specification: CS515581<br>Screening Specification: ZPP-2Ø73-GEN | TITLE:<br>TRANSISTOR, SILICON, NPN,<br>POWER SWITCHING | DETAIL SPECIFICATION<br>ST 11794 |
| Custodian: Electronic Parts Reliability Section 514 | | SHEET 1 OF 3 |

FILE: (Sec.514): F:\USERS\514\SPECS\ST11794.F

TABLE II. MANUFACTURERS MAXIMUM RATINGS ($T_A$=25°C)

| PARAMETER | RATING | UNITS |
|---|---|---|
| $V_{CBO}$ | 1ØØ | Vdc |
| $V_{CEO}$ | 8Ø | Vdc |
| $I_C$ | 5 | Adc |
| $P_T$ | 1 | W |
| $R_{TH(J-A)}$ | 175 | °C/W |
| $T_J$ | -55 TO 2ØØ | °C |

TABLE III. DETAIL SCREENING TESTS

| SCREEN (SEE MIL-S-195ØØ, TABLE II) | TEST CONDITIONS/REQUIREMENTS |
|---|---|
| 3c. THERMAL RESPONSE | $I_C$=Ø.8 TO 1.2 A, $V_{CE}$=2Ø Vdc, $T_C$=25 TO 75 °C. |
| 9. INTERIM ELECTRICAL PARAMETERS | $I_{CEX1}$ AND $h_{FE1}$ PER TABLE IV. |
| 11. INTERIM ELECTRICAL AND DELTA PARAMETERS | $I_{CEX1}$ AND $h_{FE1}$ PER TABLE IV.<br>DELTA LIMITS: $\Delta I_{CEX1}$ = ±2Ø% OF INITIAL OR ±2 uA WHICHEVER IS GREATER<br>$\Delta h_{FE1}$ = ±15% OF INITIAL VALUE |
| 12. POWER BURN-IN | MIL-STD-75Ø, METHOD 1Ø39, CONDITION B.<br>$T_J$=187.5 ±12.5 °C, $V_{CE}$=25 ± 5 Vdc, $T_A$≤1ØØ°C . |
| 13. FINAL ELECTRICAL TESTS | |
| A. PARAMETERS | TABLE IV, SUBGROUPS 2 AND 3 |
| B. DELTA LIMITS | SAME PARAMETERS AND DELTAS LIMITS AS 11 ABOVE. |

TABLE IV. GROUP A ELECTRICAL TESTS

| TEST | MIL-STD-75Ø METHOD | TEST CONDITIONS | LIMITS | | |
|---|---|---|---|---|---|
| | | | MIN | MAX | UNITS |
| SUBGROUP 2<br>$T_A$=25°C<br><br>COLLECTOR-BASE BREAKDOWN VOLTAGE, $BV_{CBO}$ | 3ØØ1 | $I_C$=1Ø uA, $I_E$=Ø | 1ØØ | | Vdc |
| COLLECTOR-EMITTER BREAKDOWN VOLTAGE, $BV_{CEO}$ | 3Ø11 | $I_C$=1Ø mA 1/ | 7Ø | | Vdc |
| EMITTER-BASE BREAKDOWN VOLTAGE, $BV_{EBO}$ | 3Ø26 | $I_E$=1ØØ uA, $I_C$=Ø | 7 | | Vdc |
| COLLECTOR-EMITTER LEAKAGE CURRENT, $I_{CEX1}$ | 3Ø41 | $V_{CE}$=1ØØ Vdc, $V_{BE}$=-Ø.5 Vdc | | 1Ø | uA |
| EMITTER-BASE LEAKAGE CURRENT, $I_{EBO}$ | 3Ø61 | $V_{EB}$=7 Vdc, $I_C$=Ø | | 1Ø | uA |
| FORWARD CURRENT TRANSFER RATIO, $h_{FE1}$ | 3Ø76 | $I_C$=1 A, $V_{CE}$=2 Vdc 1/ | 4Ø | 12Ø | |
| FORWARD CURRENT TRANSFER RATIO, $h_{FE2}$ | 3Ø76 | $I_C$=5 A, $V_{CE}$=6 Vdc 1/ | 15 | | |
| COLLECTOR-EMITTER SATURATION VOLTAGE, $V_{CE(SAT)}$ | 3Ø71 | $I_C$=1 A, $I_B$=Ø.1 A 1/ | | Ø.5 | Vdc |
| BASE-EMITTER SATURATION VOLTAGE, $V_{BE(SAT)}$ | 3Ø66 | $I_C$=1 A, $I_B$=Ø.1 A 1/ | | 1.5 | Vdc |
| SUBGROUP 3<br><br>COLLECTOR-EMITTER LEAKAGE CURRENT, $I_{CEX2}$ | 3Ø41 | $V_{CE}$=6Ø Vdc, $V_{BE}$=-Ø.5 Vdc<br>$T_A$=15Ø°C | | 5Ø | uA |
| FORWARD CURRENT TRANSFER RATIO, $h_{FE3}$ | 3Ø76 | $I_C$=1 A, $V_{CE}$=2 Vdc 1/<br>$T_A$=-55°C | 1Ø | | |
| SUBGROUPS 4 THROUGH 7<br><br>2/ | | | | | |

NOTES:

1/ PULSE TEST: PULSE WIDTH ≤ 3ØØusec; DUTY CYCLE ≤ 2%.

2/ THESE TESTS NOT REQUIRED UNLESS SPECIFIED.

| | |
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