

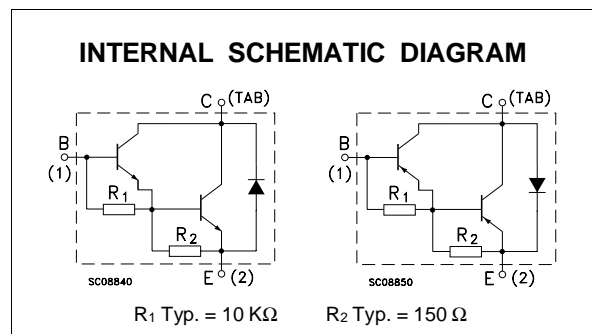
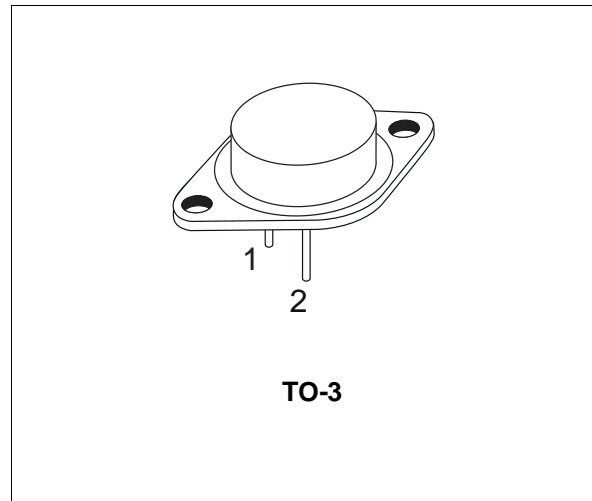
COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

■ SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

The MJ2501 is a silicon epitaxial-base PNP power transistors in monolithic Darlingtion configuration and are mounted in Jedec TO-3 metal case. They are intended for use in power linear and switching applications.

The complementary NPN type is the MJ3001.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | | Unit |
|------------------|------------------------------------------------|-------|------------|------|
| | | PNP | MJ2501 | |
| | | NPN | MJ3001 | |
| V _{CBO} | Collector-base Voltage (I _E = 0) | | 80 | V |
| V _{CEO} | Collector-emitter Voltage (I _B = 0) | | 80 | V |
| V _{EBO} | Emitter-base Voltage (I _C = 0) | | 5 | V |
| I _C | Collector Current | | 10 | A |
| I _B | Base Current | | 0.2 | A |
| P _{tot} | Total Dissipation at T _c ≤ 25 °C | | 150 | W |
| T _{stg} | Storage Temperature | | -65 to 200 | °C |
| T _j | Max. Operating Junction Temperature | | 200 | °C |

For PNP types voltage and current values are negative.

THERMAL DATA

| | | | | |
|-----------------------|----------------------------------|-----|------|------|
| R _{thj-case} | Thermal Resistance Junction-case | Max | 1.17 | °C/W |
|-----------------------|----------------------------------|-----|------|------|

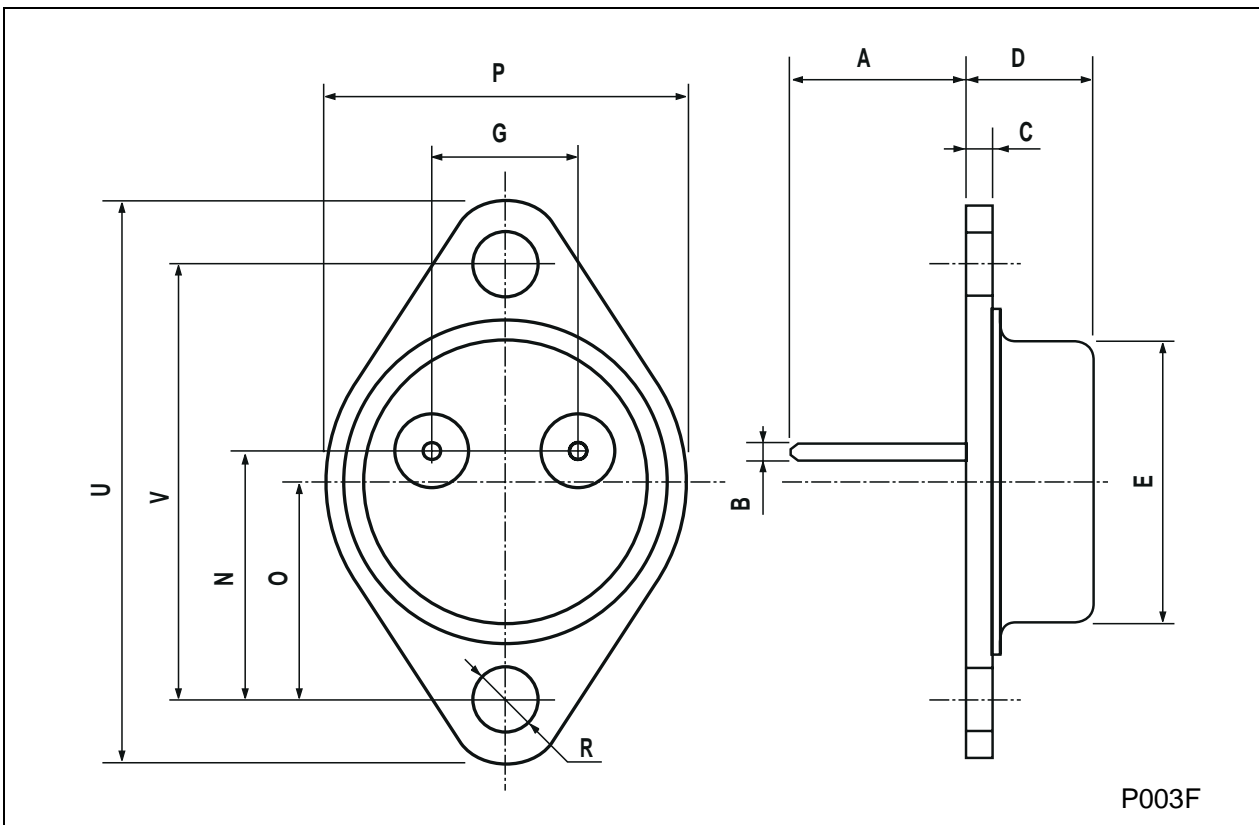
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------|-----------------------------------------------------------|------------------------------------------------------|------|------|--------|----------|
| I _{CER} | Collector Cut-off Current (R _{BE} = 1 KΩ) | V _{CE} = 80 V T _{case} = 150 °C | | | 1 | mA |
| | | V _{CE} = 80 V | | | 5 | mA |
| I _{CEO} | Collector Cut-off Current (I _B = 0) | V _{CE} = 30 V V _{CE} = 40 V | | | 1 1 | mA mA |
| I _{EBO} | Emitter Cut-off Current (I _C = 0) | V _{EB} = 5 V | | | 2 | mA |
| V _{CEO(sus)*} | Collector-Emitter Sustaining Voltage (I _B = 0) | I _C = 100 mA | 80 | | | V |
| V _{CE(sat)*} | Collector-emitter Saturation Voltage | I _C = 5 A I _B = 20 mA | | | 2 | V |
| | | I _C = 10 A I _B = 50 mA | | | 4 | V |
| V _{BE*} | Base-emitter Voltage | I _C = 5 A V _{CE} = 3 V | | | 3 | V |
| h _{FE*} | DC Current Gain | I _C = 5 A V _{CE} = 3 V | 1000 | | | |

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %
For PNP types voltage and current values are negative.

TO-3 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|-------|------|-------|-------|------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 11.00 | | 13.10 | 0.433 | | 0.516 |
| B | 0.97 | | 1.15 | 0.038 | | 0.045 |
| C | 1.50 | | 1.65 | 0.059 | | 0.065 |
| D | 8.32 | | 8.92 | 0.327 | | 0.351 |
| E | 19.00 | | 20.00 | 0.748 | | 0.787 |
| G | 10.70 | | 11.10 | 0.421 | | 0.437 |
| N | 16.50 | | 17.20 | 0.649 | | 0.677 |
| P | 25.00 | | 26.00 | 0.984 | | 1.023 |
| R | 4.00 | | 4.09 | 0.157 | | 0.161 |
| U | 38.50 | | 39.30 | 1.515 | | 1.547 |
| V | 30.00 | | 30.30 | 1.187 | | 1.193 |



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