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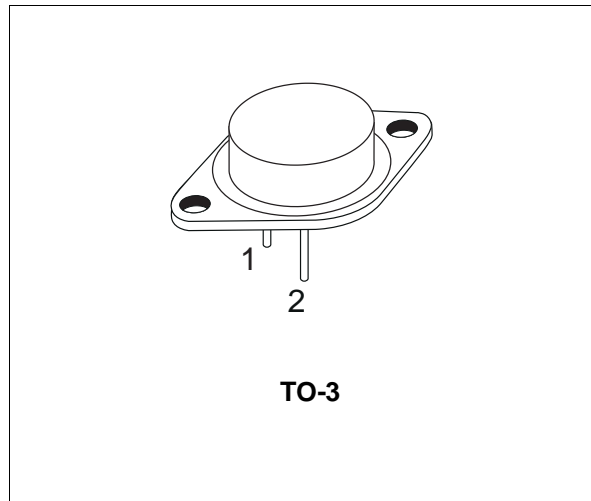
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## SILICON NPN POWER TRANSISTOR

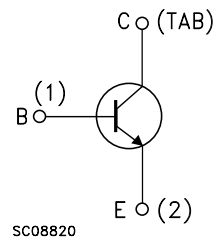
- STMicroelectronics PREFERRED SALESTYPE

### DESCRIPTION

The MJ802 is a silicon Epitaxial-Base power transistor mounted in Jedec TO-3 metal case. It is intended for general purpose power amplifier and switching applications.



### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Parameter  | Value      | Unit             |
|-----------|--|------------|------------------|
| $V_{CEO}$ | Collector-emitter Voltage ( $I_B = 0$ )          | 90         | V                |
| $V_{CBO}$ | Collector-base Voltage ( $I_E = 0$ )             | 100        | V                |
| $V_{EBO}$ | Emitter-Base Voltage ( $I_C = 0$ )               | 4          | V                |
| $I_C$     | Collector Current                                | 30         | A                |
| $I_B$     | Base Current                                     | 7.5        | A                |
| $P_{tot}$ | Total Dissipation at $T_c \leq 25^\circ\text{C}$ | 200        | W                |
| $T_{stg}$ | Storage Temperature                              | -65 to 200 | $^\circ\text{C}$ |
| $T_j$     | Max. Operating Junction Temperature              | 200        | $^\circ\text{C}$ |

## MJ802

### THERMAL DATA

|                       |                                  |     |       |      |
|-----------------------|----------------------------------|-----|-------|------|
| R <sub>thj-case</sub> | Thermal Resistance Junction-case | Max | 0.875 | °C/W |
|-----------------------|----------------------------------|-----|-------|------|

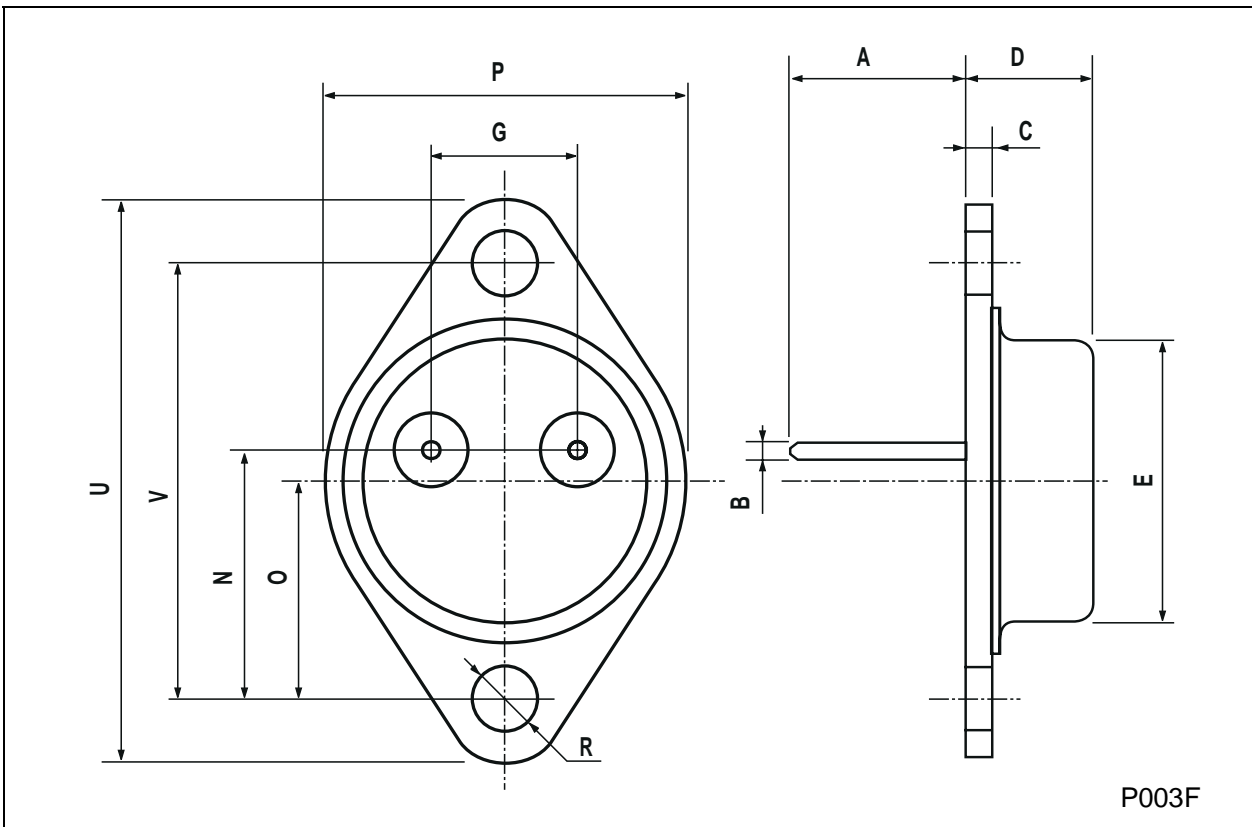
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

| Symbol                 | Parameter  | Test Conditions  | Min. | Typ. | Max.   | Unit     |
|------------------------|--|--|------|------|--------|----------|
| I <sub>CB0</sub>       | Collector Cut-off Current (I <sub>E</sub> = 0)                 | V <sub>CB</sub> = 100 V<br>V <sub>CB</sub> = 100 V      T <sub>case</sub> = 150 °C |      |      | 1<br>5 | mA<br>mA |
| I <sub>EBO</sub>       | Emitter Cut-off Current (I <sub>C</sub> = 0)                   | V <sub>EB</sub> = 4 V  |      |      | 1      | mA       |
| V <sub>CEO(sus)*</sub> | Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)      | I <sub>C</sub> = 200 mA  | 90   |      |        | V        |
| V <sub>CER(sus)*</sub> | Collector-emitter Sustaining Voltage (R <sub>BE</sub> = 100 Ω) | I <sub>C</sub> = 200 mA  | 100  |      |        | V        |
| V <sub>CE(sat)*</sub>  | Collector-Emitter Saturation Voltage                           | I <sub>C</sub> = 7.5 A      I <sub>B</sub> = 0.75 A                                |      |      | 0.8    | V        |
| V <sub>BE(sat)*</sub>  | Base-Emitter Saturation Voltage                                | I <sub>C</sub> = 7.5 A      I <sub>B</sub> = 0.75 A                                |      |      | 1.3    | V        |
| V <sub>BE*</sub>       | Base-Emitter Voltage   | I <sub>C</sub> = 7.5 A      V <sub>CE</sub> = 2 V                                  |      |      | 1.3    | V        |
| h <sub>FE*</sub>       | DC Current Gain  | I <sub>C</sub> = 7.5 A      V <sub>CE</sub> = 2 V                                  | 25   |      | 100    |          |
| f <sub>T</sub>         | Transition Frequency   | I <sub>C</sub> = 1 A      V <sub>CE</sub> = 10 V<br>f = 1 MHz                      | 2    |      |        | MHz      |

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

**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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