

## THERMAL DATA

|                |                                  |     |      |      |
|----------------|----------------------------------|-----|------|------|
| $R_{thj-case}$ | Thermal Resistance Junction-case | Max | 1.17 | °C/W |
|----------------|----------------------------------|-----|------|------|

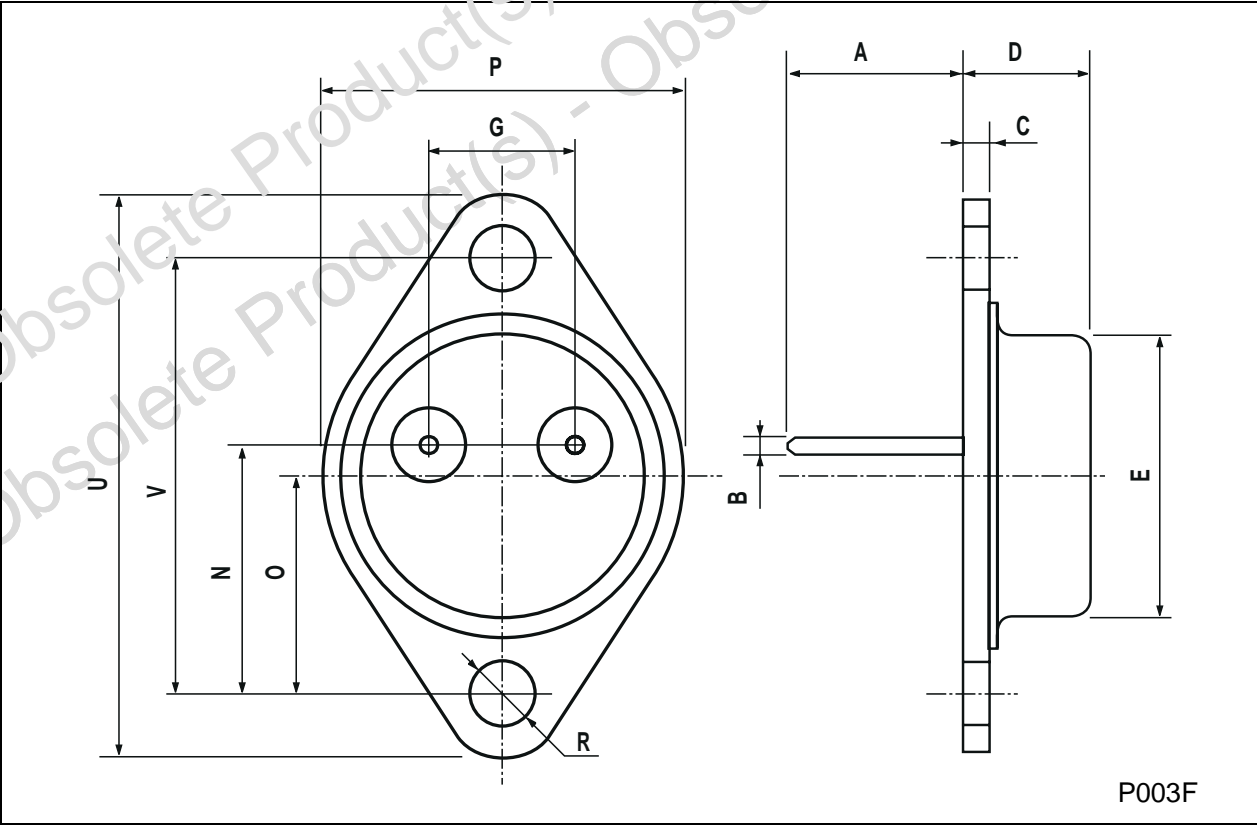
ELECTRICAL CHARACTERISTICS ( $T_{case} = 25\text{ °C}$  unless otherwise specified)

| Symbol          | Parameter   | Test Conditions            |                       | Min. | Typ. | Max. | Unit |
|-----------------|---|----------------------------|-----------------------|------|------|------|------|
| $I_{CER}$       | Collector Cut-off Current ( $R_{BE} = 1\text{ K}\Omega$ ) | $V_{CE} = 80\text{ V}$     |                       |      |      | 1    | mA   |
|                 |   | $T_{case} = 150\text{ °C}$ |                       |      |      | 5    | mA   |
| $I_{CEO}$       | Collector Cut-off Current ( $I_B = 0$ )                   | $V_{CE} = 30\text{ V}$     |                       |      |      | 1    | mA   |
|                 |   | $V_{CE} = 40\text{ V}$     |                       |      |      | 1    | mA   |
| $I_{EBO}$       | Emitter Cut-off Current ( $I_C = 0$ )                     | $V_{EB} = 5\text{ V}$      |                       |      |      | 2    | mA   |
| $V_{CEO(sus)*}$ | Collector-Emitter Sustaining Voltage ( $I_B = 0$ )        | $I_C = 100\text{ mA}$      |                       | 80   |      |      | V    |
| $V_{CE(sat)*}$  | Collector-emitter Saturation Voltage                      | $I_C = 5\text{ A}$         |                       |      |      | 2    | V    |
|                 |   | $I_C = 10\text{ A}$        |                       |      |      | 4    | V    |
| $V_{BE*}$       | Base-emitter Voltage                                      | $I_C = 5\text{ A}$         | $V_{CE} = 3\text{ V}$ |      |      | 3    | V    |
| $h_{FE*}$       | DC Current Gain   | $I_C = 5\text{ A}$         | $V_{CE} = 3\text{ V}$ | 1000 |      |      |      |

\* Pulsed: Pulse duration = 300  $\mu$ s, 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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