



## 2N3055

### NPN SILICON POWER TRANSISTORS

The 2N3055 is a silicon Planar Epitaxial NPN transistor in Jedec TO-3 metal case. Designed for general purpose, moderate speed, switching and amplifier applications Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Ratings                        | Value                   | Unit       |               |
|-----------|--------------------------------|-------------------------|------------|---------------|
| $V_{CBO}$ | Collector to Base Voltage      | 100                     | V          |               |
| $V_{CEO}$ | #Collector-Emitter Voltage     | 60                      | V          |               |
| $V_{CER}$ | Collector-Emitter Voltage      | 70                      | V          |               |
| $V_{EBO}$ | Emitter-Base Voltage           | 7                       | V          |               |
| $V_{CB}$  | Collector-Base Voltage         | 100                     | V          |               |
| $V_{EB}$  | Emitter-Base Voltage           | 7                       | V          |               |
| $I_C$     | Collector Current – Continuous | 15                      | A          |               |
| $I_B$     | Base Current – Continuous      | 7                       | A          |               |
| $P_D$     | Total Device Dissipation       | @ $T_C = 25^\circ$      | 115        | W             |
|           |                                | Derate above $25^\circ$ | 0.657      | W/ $^\circ C$ |
| $T_J$     | Junction Temperature           | 200                     | $^\circ C$ |               |
| $T_S$     | Storage Temperature            | -65 to +200             | $^\circ C$ |               |

#### THERMAL CHARACTERISTICS

| Symbol     | Ratings                              | Value | Unit         |
|------------|--------------------------------------|-------|--------------|
| $R_{thJC}$ | Thermal Resistance, Junction to Case | 1.52  | $^\circ C/W$ |



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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

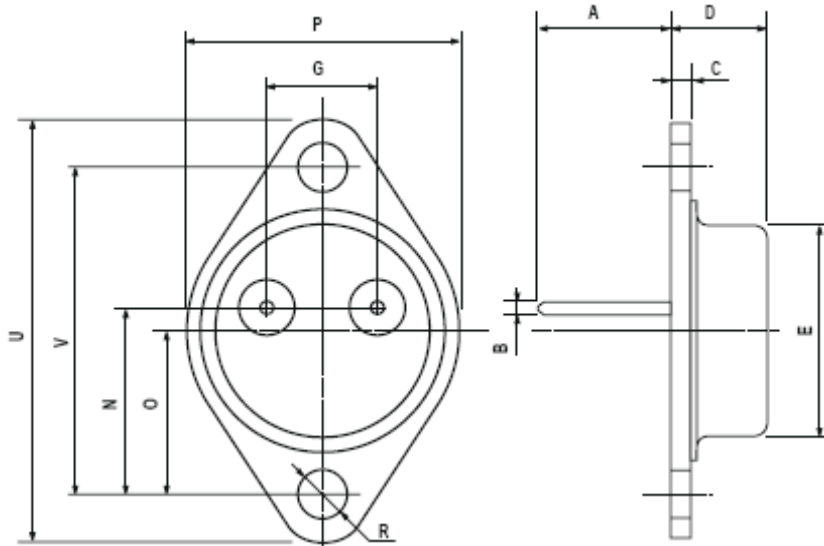
| Symbol         | Ratings                                  | Test Condition(s)   | Min  | Typ | Max | Unit |
|----------------|--|---|------|-----|-----|------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage (*) | $I_C = 200 \text{ mA}, I_B = 0$   | 60   | -   | -   | V    |
| $V_{CER}$      | Collector-Emitter Breakdown Voltage (*)  | $I_C = 200 \text{ mA}, R_{BE} = 100\Omega$  | 70   | -   | -   | V    |
| $I_{CEO}$      | Collector-Emitter Current                | $V_{CE} = 30 \text{ V}, I_B = 0$  | -    | -   | 0.7 | mA   |
| $I_{CEX}$      | Collector Cutoff Current                 | $V_{CE} = 100 \text{ V}, V_{EB(off)} = 1.5 \text{ V}$                                       | -    | -   | 1   | mA   |
|                |  | $V_{CE} = 100 \text{ V}, V_{EB(off)} = 1.5 \text{ V}$<br>$T_C = 150 \text{ }^\circ\text{C}$ | -    | -   | 5   |      |
| $I_{EBO}$      | Emitter Cutoff Current                   | $V_{BE} = 7 \text{ V}, I_C = 0$   | -    | -   | 5   | mA   |
| $h_{FE}$       | DC Current Gain                          | $I_C = 4 \text{ A}, V_{CE} = 4 \text{ A}$   | 20   | -   | 70  | -    |
|                |  | $I_C = 10 \text{ A}, V_{CE} = 4 \text{ A}$  | 5    | -   | -   |      |
| $V_{CE(SAT)}$  | Collector-Emitter saturation Voltage     | $I_C = 4 \text{ A}, I_B = 400 \text{ mA}$   | -    | -   | 1.1 | V    |
|                |  | $I_C = 10 \text{ A}, I_B = 3.3 \text{ A}$   | -    | -   | 3   |      |
| $V_{BE}$       | Base-Emitter Voltage                     | $I_C = 4 \text{ A}, V_{CE} = 4 \text{ V}$   | -    | -   | 1.5 | V    |
| $f_T$          | Transition Frequency                     | $V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ A}$<br>$f = 1 \text{ MHz}$                         | 2.5  | -   | -   | kHz  |
| $I_{s/b}$      | Second Breakdown Collector Current       | $t = 1 \text{ S (non repetitive)}$  | 2.87 | -   | -   | A    |

In accordance with JEDEC Registration Data  
 (\*) Pulse Width  $\approx 300 \mu\text{s}$ , Duty Cycle  $\angle 2.0\%$

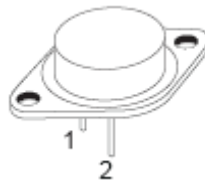
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### MECHANICAL DATA CASE TO-3

| DIMENSIONS (mm) |       |       |
|-----------------|-------|-------|
|                 | min   | max   |
| A               | 11    | 13.10 |
| B               | 0.97  | 1.15  |
| C               | 1.5   | 1.65  |
| D               | 8.32  | 8.92  |
| F               | 19    | 20    |
| G               | 10.70 | 11.1  |
| N               | 16.50 | 17.20 |
| P               | 25    | 26    |
| R               | 4     | 4.09  |
| U               | 38.50 | 39.30 |
| V               | 30    | 30.30 |



|         |           |
|---------|-----------|
| Pin 1 : | Base      |
| Pin 2 : | Emitter   |
| Case :  | Collector |



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