



Micro Commercial Components



Micro Commercial Components  
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# 2N2907 2N2907A

## Features

- High current (max.600mA)
- Low voltage (max.60V)
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)

## Maximum Ratings

| Symbol    | Rating   | Rating      | Unit |
|-----------|--|-------------|------|
| $V_{CEO}$ | Collector-Emitter Voltage<br>2N2907<br>2N2907A | 40<br>60    | V    |
| $V_{CBO}$ | Collector-Base Voltage                         | 60          | V    |
| $V_{EBO}$ | Emitter-Base Voltage                           | 5.0         | V    |
| $I_C$     | Collector Current (DC)                         | 600         | mA   |
| $I_{CM}$  | Peak Collector Current                         | 800         | mA   |
| $I_{BM}$  | Peak Base Current                              | 200         | mA   |
| $T_J$     | Operating Junction Temperature                 | -55 to +150 | °C   |
| $T_{STG}$ | Storage Temperature                            | -55 to +150 | °C   |

## Thermal Characteristics

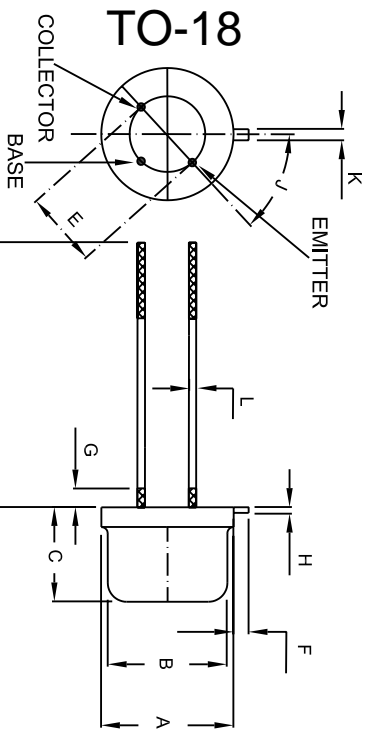
| Symbol    | Rating  | Max        | Unit    |
|-----------|---|------------|---------|
| $P_{tot}$ | Total power Dissipation<br>$T_A \leq 25^\circ C$<br>$T_C \leq 25^\circ C$ | 400<br>1.2 | mW<br>W |
| $R_{JC}$  | Thermal Resistance, Junction to Case                                      | 146        | K/W     |
| $R_{JA}$  | Thermal Resistance, Junction to Ambient                                   | 350        | K/W     |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Max | Units |
|--------|-----------|-----|-----|-------|
|--------|-----------|-----|-----|-------|

### OFF CHARACTERISTICS

|           |   |         |     |     |      |
|-----------|---|---------|-----|-----|------|
| $I_{CBO}$ | Collector cut-off current<br>( $V_{CB}=50Vdc, I_E=0$ )  | 2N2907  | --- | 20  | nAdc |
|           | ( $V_{CB}=50Vdc, I_E=0, T_A=150^\circ C$ )  | 2N2907A | --- | 10  | uAdc |
| $I_{EBO}$ | Emitter Cut-off current<br>( $I_C=0, V_{EB}=5.0Vdc$ )   | 2N2907  | --- | 50  | nAdc |
|           |   | 2N2907A | --- | 50  | nAdc |
| $h_{FE}$  | DC Current Gain<br>( $I_C=0.1mAdc, V_{CE}=10Vdc$ )<br>( $I_C=1.0mAdc, V_{CE}=10Vdc$ )<br>( $I_C=10mAdc, V_{CE}=10Vdc$ )<br>( $I_C=150mAdc, V_{CE}=10Vdc$ )*<br>( $I_C=500mAdc, V_{CE}=10Vdc$ )* | 2N2907  | 35  | 300 |      |
|           |   | 2N2907  | 50  |     |      |
|           |   | 2N2907  | 75  |     |      |
|           |   | 2N2907  | 100 |     |      |
|           |   | 2N2907  | 30  |     |      |
| $h_{FE}$  | DC Current Gain<br>( $I_C=0.1mAdc, V_{CE}=10Vdc$ )<br>( $I_C=1.0mAdc, V_{CE}=10Vdc$ )<br>( $I_C=10mAdc, V_{CE}=10Vdc$ )<br>( $I_C=150mAdc, V_{CE}=10Vdc$ )*<br>( $I_C=500mAdc, V_{CE}=10Vdc$ )* | 2N2907A | 75  | 300 |      |
|           |   | 2N2907A | 100 |     |      |
|           |   | 2N2907A | 100 |     |      |
|           |   | 2N2907A | 100 |     |      |
|           |   | 2N2907A | 50  |     |      |



| DIM | INCHES |      | MM    |       | NOTE |
|-----|--------|------|-------|-------|------|
|     | MIN    | MAX  | MIN   | MAX   |      |
| A   | .209   | .230 | 5.309 | 5.842 | Φ    |
| B   | .178   | .195 | 4.521 | 4.953 | Φ    |
| C   | .170   | .210 | 4.318 | 5.334 |      |
| D   | .50    | .75  | 12.7  | 19.05 |      |
| E   | .100   |      | 2.54  |       | ΦTYP |
| F   | .028   | .048 | 7.112 | 1.219 |      |
| G   | -----  | .050 | ----- | 1.27  |      |
| H   | .009   | .031 | 0.229 | 0.787 |      |
| J   | 44°    | 46°  | 44°   | 46°   |      |
| K   | .036   | .046 | 0.914 | 1.168 |      |
| L   | .016   | .021 | 0.406 | 0.533 |      |

Notes:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

# 2N2907,2N2907A

| Symbol                              | Parameter   | Min | Max | Units |
|-------------------------------------|---|-----|-----|-------|
| <b>ON CHARACTERISTICS*</b>          |   |     |     |       |
| $V_{CE(sat)}$                       | Collector-Emitter Saturation Voltage*<br>( $I_C=150mA$ , $I_B=15mA$ )<br>( $I_C=500mA$ , $I_B=50mA$ ) | --- | 400 | mVdc  |
|                                     |   | --- | 1.6 | Vdc   |
| $V_{BE(sat)}$                       | Base-Emitter Saturation Voltage *<br>( $I_C=150mA$ , $I_B=15mA$ )<br>( $I_C=500mA$ , $I_B=50mA$ )     | --- | 1.3 | Vdc   |
|                                     |   | --- | 2.6 | Vdc   |
| <b>SMALL-SIGNAL CHARACTERISTICS</b> |   |     |     |       |
| $C_{OB}$                            | Output Capacitance<br>( $V_{CB}=10Vdc$ , $I_E=I_C=0$ , $f=1.0MHz$ )                                   | --- | 8.0 | pF    |
| $f_T$                               | Transistor Frequency*<br>( $I_C=50mA$ , $V_{CE}=20Vdc$ , $f=100MHz$ )                                 | 200 | --- | MHz   |
| <b>SWITCHING CHARACTERISTICS</b>    |   |     |     |       |
| $T_d$                               | Delay Time  | --- | 15  | ns    |
| $t_r$                               | Rise Time   | --- | 35  | ns    |
| $t_s$                               | Storage Time  | --- | 250 | ns    |
| $t_f$                               | Fall Time   | --- | 50  | ns    |

\* Pulse Test:  $t_p \leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$



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Ordering Information :

| Device         | Packing          |
|----------------|------------------|
| Part Number-BP | Bulk; 100pcs/Box |

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