**BC546,A,B**
**BC547,A,B,C**
**BC548,A,B,C**

**SILICON**
**NPN TRANSISTORS**


**TO-92-18R CASE**

Central Semiconductor Corp.

www.centralsemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR BC546, BC547, BC548 series devices are silicon NPN small signal transistors, manufactured by the epitaxial planar process, designed for general purpose amplifier applications.

**MARKING: FULL PART NUMBER**

| **MAXIMUM RATINGS:** ($T_A$=25°C) | **SYMBOL** | **BC546** | **BC547** | **BC548** | **UNITS** |
|---|---|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 80 | 50 | 30 | V |
| Collector-Emitter Voltage | $V_{CES}$ | 80 | 50 | 30 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 65 | 45 | 30 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 6.0 | 6.0 | 5.0 | V |
| Continuous Collector Current | $I_C$ | | 100 | | mA |
| Peak Collector Current | $I_{CM}$ | | 200 | | mA |
| Peak Base Current | $I_{BM}$ | | 200 | | mA |
| Peak Emitter Current | $I_{EM}$ | | 200 | | mA |
| Power Dissipation | $P_D$ | | 500 | | mW |
| Operating and Storage Junction Temperature | $T_J$, $T_{stg}$ | | -65 to +150 | | °C |
| Thermal Resistance | $\Theta_{JA}$ | | 250 | | °C/W |
| Thermal Resistance | $\Theta_{JC}$ | | 150 | | °C/W |

**ELECTRICAL CHARACTERISTICS:** ($T_A$=25°C unless otherwise noted)

| **SYMBOL** | **TEST CONDITIONS** | **MIN** | **TYP** | **MAX** | **UNITS** |
|---|---|---|---|---|---|
| $I_{CBO}$ | $V_{CB}$=30V | | | 15 | nA |
| $I_{CBO}$ | $V_{CB}$=30V, $T_A$=150°C | | | 5.0 | µA |
| $V_{CE(SAT)}$ | $I_C$=10mA, $I_B$=0.5mA | | | 250 | mV |
| $V_{CE(SAT)}$ | $I_C$=100mA, $I_B$=5.0mA | | | 600 | mV |
| $V_{BE(SAT)}$ | $I_C$=10mA, $I_B$=0.5mA | | 700 | | mV |
| $V_{BE(SAT)}$ | $I_C$=100mA, $I_B$=5.0mA | | 900 | | mV |
| $V_{BE(ON)}$ | $V_{CE}$=5.0V, $I_C$=2.0mA | 580 | | 700 | mV |
| $V_{BE(ON)}$ | $V_{CE}$=5.0V, $I_C$=10mA | | | 770 | mV |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=10µA (BC546,A, BC547,A, BC548,A) | | 90 | | |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=10µA (BC546B, BC547B, BC548B) | | 150 | | |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=10µA (BC547C, BC548C) | | 270 | | |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=2.0mA (BC546) | 110 | | 450 | |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=2.0mA (BC546A, BC547A, BC548A) | 110 | | 220 | |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=2.0mA (BC546B, BC547B, BC548B) | 200 | | 450 | |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=2.0mA (BC547, BC548) | 110 | | 800 | |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=2.0mA (BC547C, BC548C) | 420 | | 800 | |
| $h_{fe}$ | $V_{CE}$=5.0V, $I_C$=2.0mA, f=1.0kHz | 125 | | 900 | |
| $f_T$ | $V_{CE}$=5.0V, $I_C$=10mA, f=35MHz | | 300 | | MHz |
| $C_{ob}$ | $V_{CB}$=10V, $I_E$=0, f=1.0MHz | | 2.5 | | pF |
| $C_{ib}$ | $V_{EB}$=0.5V, $I_C$=0, f=1.0MHz | | 9.0 | | pF |
| NF | $V_{CE}$=5.0V, $I_C$=0.2mA, $R_G$=2.0kΩ, B=200Hz, f=1.0kHz | | 2.0 | 10 | dB |

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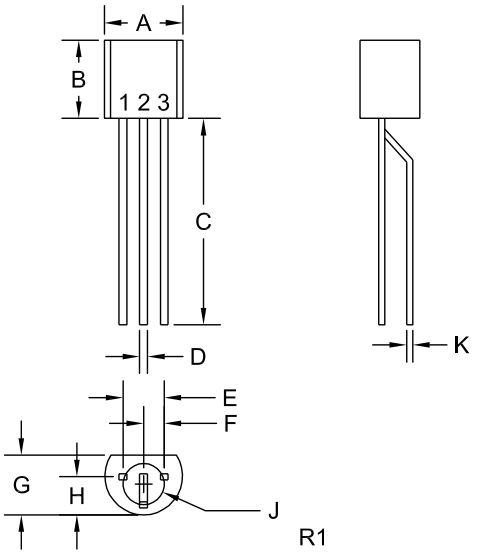
## TO-92-18R CASE - MECHANICAL OUTLINE




| DIMENSIONS | | | | |
|---|---|---|---|---|
| | INCHES | | MILLIMETERS | |
| SYMBOL | MIN | MAX | MIN | MAX |
| A (DIA) | 0.175 | 0.205 | 4.45 | 5.21 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.500 | - | 12.70 | - |
| D | 0.016 | 0.022 | 0.41 | 0.56 |
| E | 0.100 | | 2.54 | |
| F | 0.050 | | 1.27 | |
| G | 0.125 | 0.165 | 3.18 | 4.19 |
| H | 0.080 | 0.105 | 2.03 | 2.67 |
| J (DIA) | 0.100 | | 2.54 | |
| K | 0.015 | | 0.38 | |

TO-92-18R (REV: R1)

**LEAD CODE:**
1) Collector
2) Base
3) Emitter

**MARKING:**
**FULL PART NUMBER**