

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

**SILICON
NPN TRANSISTORS**



TO-92-18R CASE



www.centrasemi.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: ($T_A=25^\circ\text{C}$)

Collector-Base Voltage
Collector-Emitter Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Peak Collector Current
Peak Base Current
Peak Emitter Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance
Thermal Resistance

| SYMBOL | BC546 | BC547 | BC548 | UNITS |
|----------------|-------|-------------|-------|--------------------|
| V_{CB0} | 80 | 50 | 30 | V |
| V_{CES} | 80 | 50 | 30 | V |
| V_{CEO} | 65 | 45 | 30 | V |
| V_{EBO} | 6.0 | 6.0 | 5.0 | V |
| I_C | | 100 | | mA |
| I_{CM} | | 200 | | mA |
| I_{BM} | | 200 | | mA |
| I_{EM} | | 200 | | mA |
| P_D | | 500 | | mW |
| T_J, T_{stg} | | -65 to +150 | | $^\circ\text{C}$ |
| θ_{JA} | | 250 | | $^\circ\text{C/W}$ |
| θ_{JC} | | 150 | | $^\circ\text{C/W}$ |

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

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

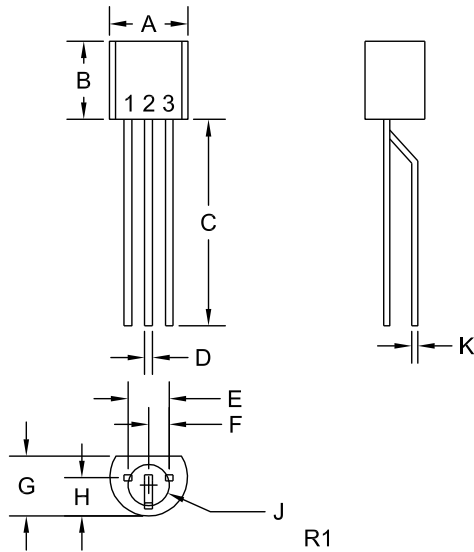
R1 (13-December 2013)

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TO-92-18R CASE - MECHANICAL OUTLINE



| SYMBOL | INCHES | | MILLIMETERS | |
|---------|--------|-------|-------------|------|
| | 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

R1 (13-December 2013)

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