

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

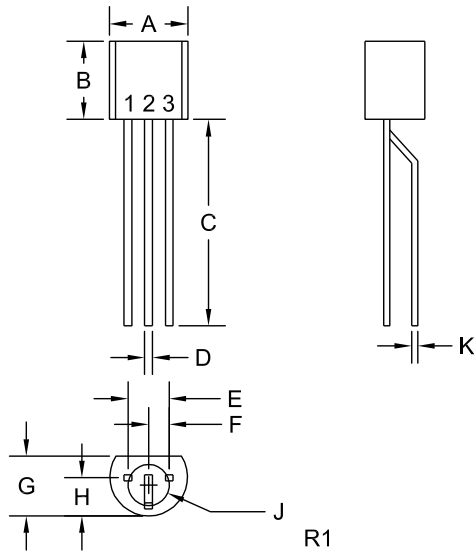
R1 (13-December 2013)

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 NPN TRANSISTORS



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)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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