

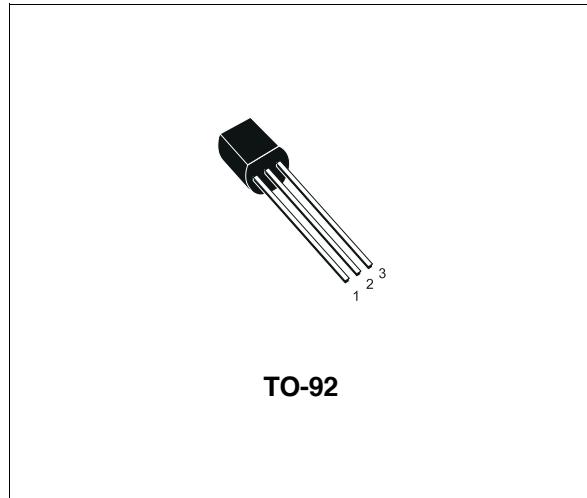
## SMALL SIGNAL NPN TRANSISTORS

Type	Marking
BC547B	BC547B
BC547C	BC547C

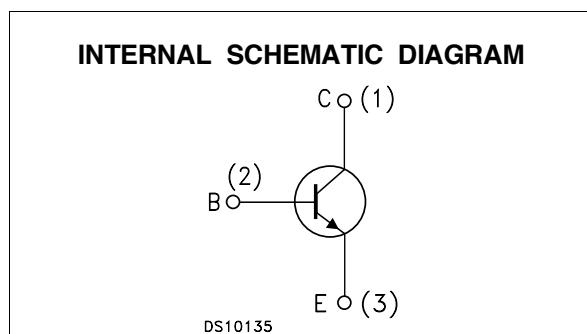
- SILICON EPITAXIAL PLANAR NPN TRANSISTORS
- TO-92 PACKAGE SUITABLE FOR THROUGH-HOLE PCB ASSEMBLY
- BC547B - THE PNP COMPLEMENTARY TYPE IS BC557B
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### APPLICATIONS

- WELL SUITABLE FOR TV AND HOME APPLIANCE EQUIPMENT
- SMALL LOAD SWITCH TRANSISTORS WITH HIGH GAIN AND LOW SATURATION VOLTAGE



TO-92



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	50	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	45	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	6	V
$I_C$	Collector Current	100	mA
$I_{CM}$	Collector Peak Current	200	mA
$P_{tot}$	Total Dissipation at $T_C = 25^\circ\text{C}$	500	mW
$T_{stg}$	Storage Temperature	-65 to 150	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	150	$^\circ\text{C}$

**THERMAL DATA**

$R_{thj\text{-amb}}$ •	Thermal Resistance Junction-Ambient	Max	250	$^{\circ}\text{C}/\text{W}$
$R_{thj\text{-Case}}$ •	Thermal Resistance Junction-Case	Max	83.3	$^{\circ}\text{C}/\text{W}$

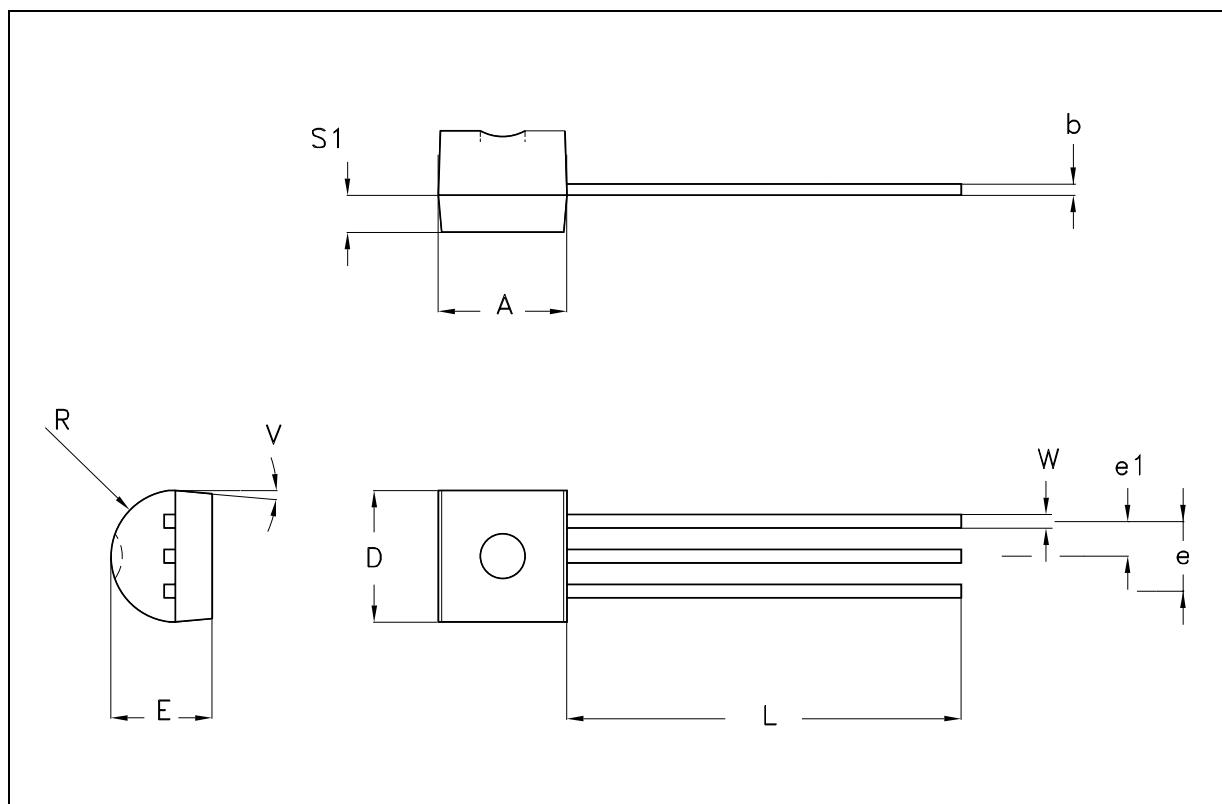
**ELECTRICAL CHARACTERISTICS** ( $T_{\text{case}} = 25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = 30 \text{ V}$ $V_{CB} = 30 \text{ V}$ $T_C = 150^{\circ}\text{C}$			15 5	nA $\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5 \text{ V}$			100	nA
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = 10 \text{ mA}$	45			V
$V_{CE(\text{sat})}^*$	Collector-Emitter Saturation Voltage	$I_C = 10 \text{ mA}$ $I_B = 0.5 \text{ mA}$ $I_C = 100 \text{ mA}$ $I_B = 5 \text{ mA}$		0.09 0.2	0.25 0.6	V V
$V_{BE(\text{sat})}^*$	Base-Emitter Saturation Voltage	$I_C = 10 \text{ mA}$ $I_B = 0.5 \text{ mA}$ $I_C = 100 \text{ mA}$ $I_B = 5 \text{ mA}$		0.7 0.9		V V
$V_{BE(\text{on})}^*$	Base-Emitter On Voltage	$I_C = 2 \text{ mA}$ $V_{CE} = 5 \text{ V}$ $I_C = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$	0.58	0.66	0.7 0.77	V V
$h_{FE}$	DC Current Gain	$I_C = 2 \text{ mA}$ $V_{CE} = 5 \text{ V}$ for <b>BC547B</b> for <b>BC547C</b>	200 420		450 800	
$f_T$	Transition Frequency	$I_C = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$ $f = 100\text{MHz}$	100			MHz
$C_{CBO}$	Collector-Base Capacitance	$I_E = 0$ $V_{CB} = 10 \text{ V}$ $f = 1 \text{ MHz}$		1.5		pF
$C_{EBO}$	Emitter-Base Capacitance	$I_C = 0$ $V_{EB} = 0.5 \text{ V}$ $f = 1 \text{ MHz}$		11		pF
NF	Noise Figure	$V_{CE} = 5 \text{ V}$ $I_C = 200 \mu\text{A}$ $f = 1\text{KHz}$ $\Delta f = 200 \text{ Hz}$ $R_G = 2 \text{ K}\Omega$		2	10	dB

\* Pulsed: Pulse duration = 300  $\mu\text{s}$ , duty cycle  $\leq 2\%$

## TO-92 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.32		4.95	0.170		0.195
b	0.36		0.51	0.014		0.020
D	4.45		4.95	0.175		0.194
E	3.30		3.94	0.130		0.155
e	2.41		2.67	0.095		0.105
e1	1.14		1.40	0.045		0.055
L	12.70		15.49	0.500		0.609
R	2.16		2.41	0.085		0.094
S1	1.14		1.52	0.045		0.059
W	0.41		0.56	0.016		0.022
V	4 degree		6 degree	4 degree		6 degree



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