

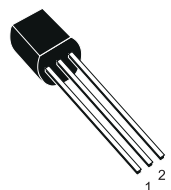
SMALL SIGNAL NPN TRANSISTORS

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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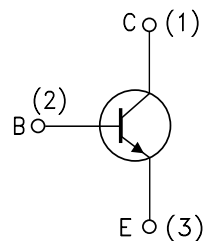
APPLICATIONS

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



TO-92

INTERNAL SCHEMATIC DIAGRAM



DS10135

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	$^\circ\text{C}$

BC547B / BC547C

THERMAL DATA

R _{thj-amb} •	Thermal Resistance Junction-Ambient	Max	250	°C/W
R _{thj-Case} •	Thermal Resistance Junction-Case	Max	83.3	°C/W

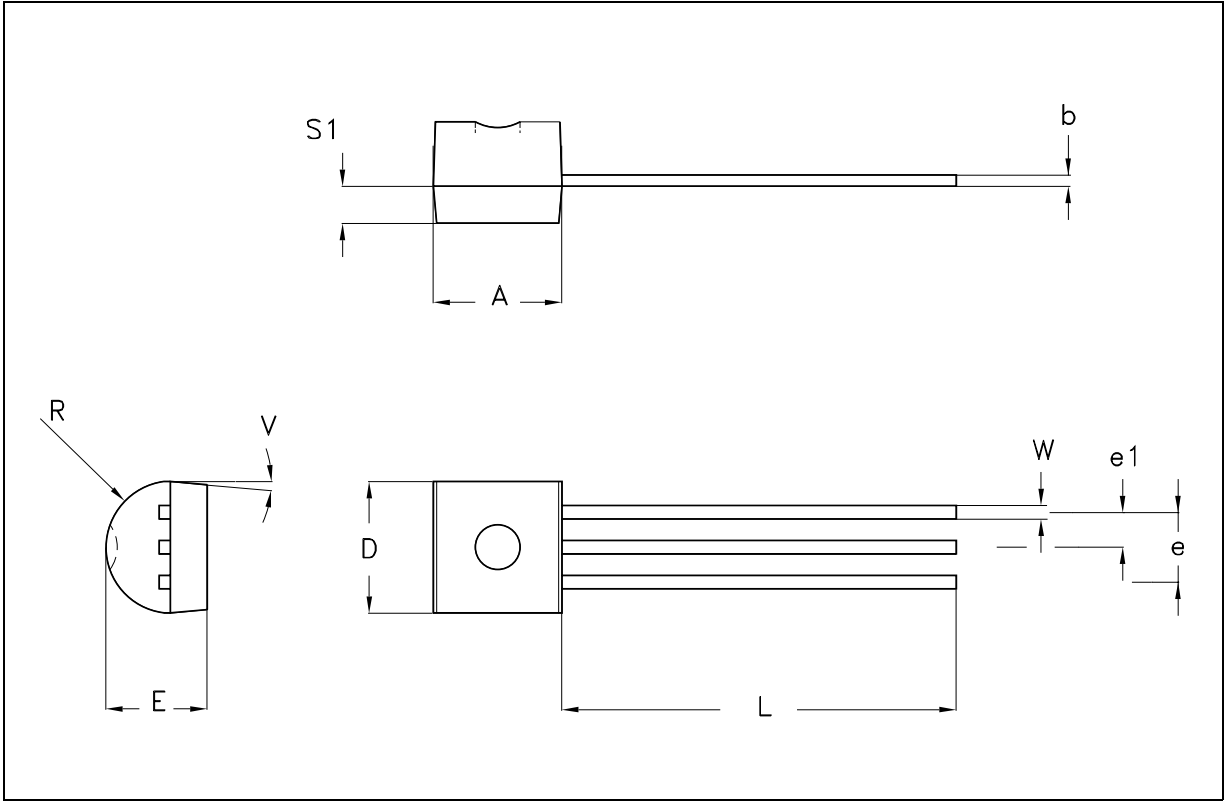
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 30 V V _{CB} = 30 V T _C = 150 °C			15 5	nA μA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			100	nA
V _{(BR)CEO} *	Collector-Emitter Breakdown Voltage (I _B = 0)	I _C = 10 mA	45			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 10 mA I _B = 0.5 mA I _C = 100 mA I _B = 5 mA		0.09 0.2	0.25 0.6	V V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	I _C = 10 mA I _B = 0.5 mA I _C = 100 mA I _B = 5 mA		0.7 0.9		V V
V _{BE(on)} *	Base-Emitter On Voltage	I _C = 2 mA V _{CE} = 5 V I _C = 10 mA V _{CE} = 5 V	0.58	0.66	0.7 0.77	V V
h _{FE}	DC Current Gain	I _C = 2 mA V _{CE} = 5 V for BC547B for BC547C	200 420		450 800	
f _T	Transition Frequency	I _C = 10 mA V _{CE} = 5 V f = 100MHz	100			MHz
C _{CBO}	Collector-Base Capacitance	I _E = 0 V _{CB} = 10 V f = 1 MHz		1.5		pF
C _{EBO}	Emitter-Base Capacitance	I _C = 0 V _{EB} = 0.5 V f = 1 MHz		11		pF
NF	Noise Figure	V _{CE} = 5 V I _C = 200 μA f = 1KHz Δf = 200 Hz R _G = 2 KΩ		2	10	dB

* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 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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