



**DC COMPONENTS CO., LTD.**  
DISCRETE SEMICONDUCTORS

**BC547**

**TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR**

**Description**

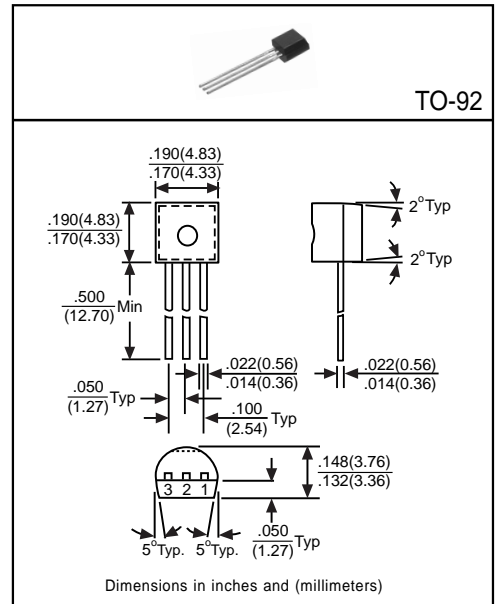
Designed for use in driver stage of audio amplifier.

**Pinning**

- 1 = Collector
- 2 = Base
- 3 = Emitter

**Absolute Maximum Ratings**( $T_A=25^{\circ}\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	50	V
Collector-Emitter Voltage	$V_{CE0}$	45	V
Emitter-Base Voltage	$V_{EB0}$	6	V
Collector Current	$I_C$	100	mA
Total Power Dissipation	$P_D$	500	mW
Junction Temperature	$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$



**Electrical Characteristics**

(Ratings at  $25^{\circ}\text{C}$  ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	$BV_{CB0}$	50	-	-	V	$I_C=100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	45	-	-	V	$I_C=1\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$BV_{EB0}$	6	-	-	V	$I_E=10\mu\text{A}, I_C=0$
Collector Cutoff Current	$I_{CBO}$	-	-	15	nA	$V_{CB}=30\text{V}, I_E=0$
Collector-Emitter Saturation Voltage <sup>(1)</sup>	$V_{CE(sat)1}$	-	-	0.25	V	$I_C=10\text{mA}, I_B=0.5\text{mA}$
	$V_{CE(sat)2}$	-	-	0.6	V	$I_C=100\text{mA}, I_B=5\text{mA}$
Base-Emitter Saturation Voltage <sup>(1)</sup>	$V_{BE(sat)1}$	-	0.7	-	V	$I_C=10\text{mA}, I_B=0.5\text{mA}$
	$V_{BE(sat)2}$	-	0.9	-	V	$I_C=100\text{mA}, I_B=5\text{mA}$
Base-Emitter On Voltage	$V_{BE(on)1}$	0.58	-	0.7	V	$I_C=2\text{mA}, V_{CE}=5\text{V}$
	$V_{BE(on)2}$	-	-	0.77	V	$I_C=10\text{mA}, V_{CE}=5\text{V}$
DC Current Gain <sup>(1)</sup>	$h_{FE}$	110	-	800	-	$I_C=2\text{mA}, V_{CE}=5\text{V}$
Transition Frequency	$f_T$	-	300	-	MHz	$I_C=10\text{mA}, V_{CE}=5\text{V}, f=100\text{MHz}$
Output Capacitance	$C_{ob}$	-	-	4.5	pF	$V_{CE}=10\text{V}, f=1\text{MHz}, I_E=0$

(1)Pulse Test: Pulse Width  $\leq 380\mu\text{s}$ , Duty Cycle  $\leq 2\%$

**Classification of  $h_{FE}$**

Rank	A	B	C
Range	110~220	200~450	420~800