



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

BC547

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

**Description**

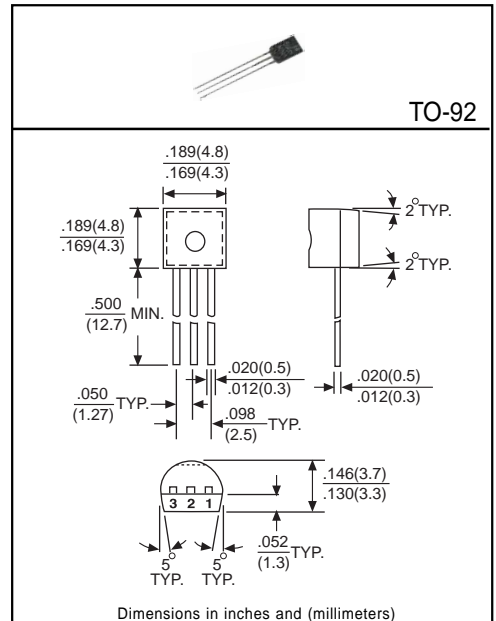
Designed for switching and AF amplifier amplification suitable for automatic insertion in thick and thin-film circuits.

**Pinning**

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

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	50	V
Collector-Emitter Voltage	V <sub>CE0</sub>	45	V
Emitter-Base Voltage	V <sub>EB0</sub>	6	V
Collector Current	I <sub>C</sub>	100	mA
Total Power Dissipation( $T_A=25^{\circ}C$ )	P <sub>D</sub>	625	mW
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C



**Electrical Characteristics**

(Ratings at 25°C ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	50	-	-	V	I <sub>C</sub> =100μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	BV <sub>CE0</sub>	45	-	-	V	I <sub>C</sub> =1mA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	BV <sub>EB0</sub>	6	-	-	V	I <sub>E</sub> =10μA, I <sub>C</sub> =0
Collector Cutoff Current	I <sub>CBO</sub>	-	-	15	nA	V <sub>CB</sub> =30V, I <sub>E</sub> =0
Collector-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>CE(sat)1</sub>	-	-	0.25	V	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA
	V <sub>CE(sat)2</sub>	-	-	0.6	V	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA
Base-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>BE(sat)1</sub>	-	0.7	-	V	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA
	V <sub>BE(sat)2</sub>	-	0.9	-	V	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA
Base-Emitter On Voltage	V <sub>BE(on)1</sub>	0.58	-	0.7	V	I <sub>C</sub> =2mA, V <sub>CE</sub> =5V
	V <sub>BE(on)2</sub>	-	-	0.77	V	I <sub>C</sub> =10mA, V <sub>CE</sub> =5V
DC Current Gain <sup>(1)</sup>	h <sub>FE</sub>	110	-	800	-	I <sub>C</sub> =2mA, V <sub>CE</sub> =5V
Transition Frequency	f <sub>T</sub>	-	300	-	MHz	I <sub>C</sub> =10mA, V <sub>CE</sub> =5V, f=100MHz
Output Capacitance	C <sub>ob</sub>	-	-	4.5	pF	V <sub>CE</sub> =10V, f=1MHz, I <sub>E</sub> =0

(1) Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

**Classification of h<sub>FE</sub>**

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

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