



DC COMPONENTS CO., LTD.  
DISCRETE SEMICONDUCTORS

BC846

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

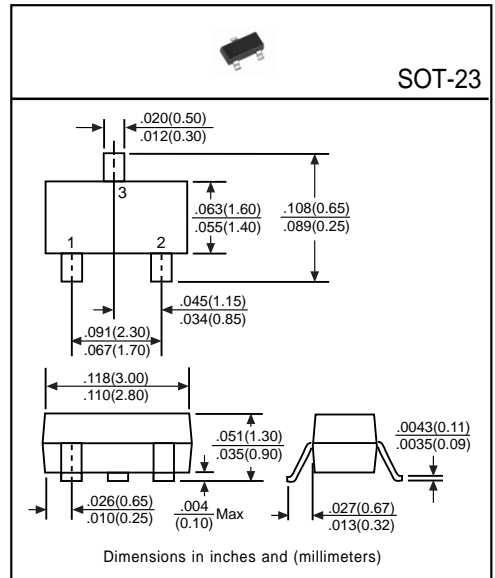
Designed for switching and AF amplifier amplification suitable for automatic insertion in thick and thin-film circuits.

Pinning

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

Absolute Maximum Ratings (TA=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	80	V
Collector-Emitter Voltage	V <sub>CEO</sub>	65	V
Emitter-Base Voltage	V <sub>EB0</sub>	6	V
Collector Current	I <sub>C</sub>	100	mA
Total Power Dissipation	P <sub>D</sub>	225	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>	80	-	-	V	I <sub>C</sub> =10μA
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	65	-	-	V	I <sub>C</sub> =1mA
Emitter-Base Breakdown Voltage	BV <sub>EB0</sub>	6	-	-	V	I <sub>E</sub> =1μA
Collector Cutoff Current	I <sub>CBO</sub>	-	-	15	nA	V <sub>CB</sub> =30V
Collector-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>CE(sat)1</sub>	-	90	250	mV	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA
	V <sub>CE(sat)2</sub>	-	200	600	mV	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA
Base-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>BE(sat)1</sub>	-	700	-	mV	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA
	V <sub>BE(sat)2</sub>	-	900	-	mV	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA
Base-Emitter On Voltage	V <sub>BE(on)1</sub>	580	-	700	mV	I <sub>C</sub> =2mA, V <sub>CE</sub> =5V
	V <sub>BE(on)2</sub>	-	-	770	mV	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
Output Capacitance	C <sub>ob</sub>	-	3.5	6	pF	V <sub>CB</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(Marking)	A	B	C
Range	110~220	200~450	420~800