



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

BC848

BC849

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

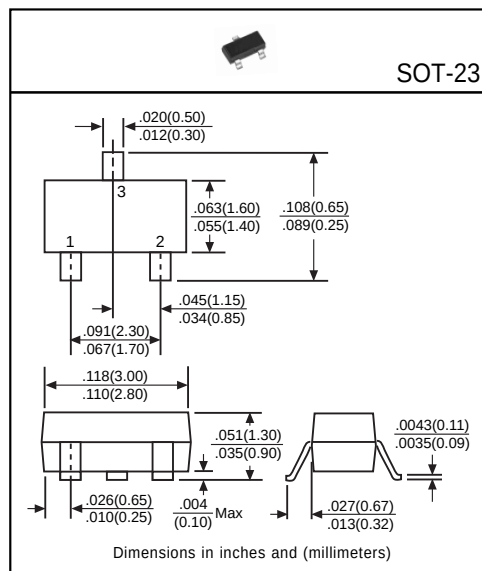
Designed for switching and AF amplifier amplification suitable for automatic insertion in thick and thin-film circuits.

Pinning

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

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	30	V
Collector-Emitter Voltage	V_{CE0}	30	V
Emitter-Base Voltage	V_{EB0}	5	V
Collector Current	I_C	100	mA
Total Power Dissipation	P_D	225	mW
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$



Electrical Characteristics

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	BV_{CB0}	30	-	-	V	$I_C=100\mu\text{A}$, $I_E=0$
Collector-Emitter Breakdown Voltage	BV_{CE0}	30	-	-	V	$I_C=1\text{mA}$, $I_B=0$
Emitter-Base Breakdown Voltage	BV_{EB0}	5	-	-	V	$I_E=10\mu\text{A}$, $I_C=0$
Collector Cutoff Current	I_{CB0}	-	-	15	nA	$V_{CB}=30\text{V}$, $I_E=0$
Collector-Emitter Saturation Voltage ⁽¹⁾	$V_{CE(sat)1}$	-	-	0.25	V	$I_C=10\text{mA}$, $I_B=0.5\text{mA}$
	$V_{CE(sat)2}$	-	0.2	0.6	V	$I_C=100\text{mA}$, $I_B=5\text{mA}$
Base-Emitter Saturation Voltage ⁽¹⁾	$V_{BE(sat)1}$	-	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 ⁽¹⁾	$V_{BE(on)}$	0.58	-	0.7	V	$I_C=2\text{mA}$, $V_{CE}=5\text{V}$
DC Current Gain ⁽¹⁾	BC848	h_{FE}	110	-	800	$I_C=2\text{mA}$, $V_{CE}=5\text{V}$
	BC849		200	-	800	
Transition Frequency	f_T	100	-	-	MHz	$I_C=10\text{mA}$, $V_{CE}=5\text{V}$, $f=100\text{MHz}$
Output Capacitance	C_{ob}	-	3.5	6	pF	$V_{CB}=10\text{V}$, $f=1\text{MHz}$
Noise Figure	BC848	NF	-	-	10	$V_{CE}=5\text{V}$, $I_C=200\mu\text{A}$, $f=1\text{KHz}$, $R_S=2\text{K}\Omega$, $B=200\text{Hz}$
	BC849		-	-	4	

(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