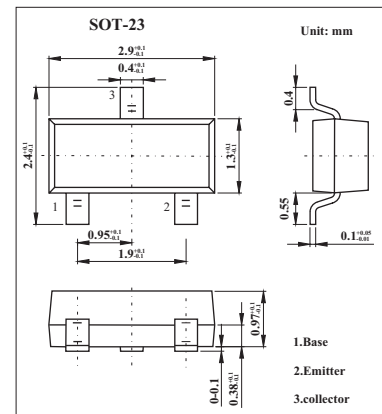
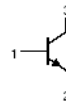


## NPN General Purpose Transistor

## BC846,BC847,BC848

## ■ Features

- Low current (max. 100 mA).
- Low voltage (max. 65 V).

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	BC846	BC847	BC848	Unit
Collector-base voltage	$V_{CB0}$	80	50	30	V
Collector-emitter voltage	$V_{CE0}$	65	45	30	V
Emitter-base voltage	$V_{EB0}$	6	6	5	V
Collector current	$I_C$	100			mA
Peak collector current	$I_{CM}$	200			mA
Peak base current	$I_{BM}$	200			mA
Total power dissipation *	$P_{tot}$	250			mW
Junction temperature	$T_j$	150			$^\circ\text{C}$
Storage temperature	$T_{stg}$	-65 to +150			$^\circ\text{C}$
Operating ambient temperature	$R_{amb}$	-65 to +150			$^\circ\text{C}$
Thermal resistance from junction to ambient *	$R_{th\ j-a}$	500			K/W

\* Transistor mounted on an FR4 printed-circuit board, standard footprint.

**BC846,BC847,BC848**

## ■ Electrical Characteristics Ta = 25°C

Parameter		Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current		ICBO	V <sub>CB</sub> = 30 V, I <sub>E</sub> = 0			15	nA
		ICBO	V <sub>CB</sub> = 30 V, I <sub>E</sub> = 0, T <sub>J</sub> = 150°C			5	μA
Emitter cutoff current		IEBO	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0			100	nA
DC current gain	BC846	h <sub>FE</sub>	I <sub>C</sub> = 2 mA; V <sub>CE</sub> = 5 V	110		450	
	BC847			110		800	
	BC846A,BC847A			110	180	220	
	BC846B,BC847B,BC848B			200	290	450	
	BC847C			420	520	800	
Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> = 10 mA; I <sub>B</sub> = 0.5 mA		90	250	mV
			I <sub>C</sub> = 100 mA; I <sub>B</sub> = 5 mA; *		200	600	mV
Base-emitter saturation voltage		V <sub>BE(sat)</sub>	I <sub>C</sub> = 10 mA; I <sub>B</sub> = 0.5 mA		700		mV
			I <sub>C</sub> = 100 mA; I <sub>B</sub> = 5 mA; *		900		mV
Base-emitter voltage		V <sub>BE</sub>	I <sub>C</sub> = 2 mA; V <sub>CE</sub> = 5 V	580	660	700	mV
			I <sub>C</sub> = 10 mA; V <sub>CE</sub> = 5 V			770	mV
Collector capacitance		C <sub>C</sub>	V <sub>CB</sub> = 10 V; I <sub>E</sub> = I <sub>C</sub> = 0; f = 1 MHz		2.5		pF
Transition frequency		f <sub>T</sub>	V <sub>CE</sub> = 5 V; I <sub>C</sub> = 10 mA; f = 100 MHz	100			MHz
Noise figure		NF	I <sub>C</sub> = 200 μA; V <sub>CE</sub> = 5 V; R <sub>s</sub> = 2 kΩ; f = 1 kHz; B = 200 Hz		2	10	dB

\* Pulse test: t<sub>p</sub> ≤ 300 μs, δ ≤ 0.02.

## ■ hFE Classification

TYPE	BC846	BC846A	BC846B
Marking	1D	1A	1B

TYPE	BC847	BC847A	BC847B	BC847C
Marking	1H	1E	1F	1G

TYPE	BC848
Marking	1K