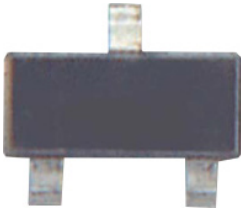
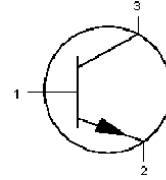


SMD NPN Transistor



Features:

- Silicon planar epitaxial transistors
- General purpose NPN transistors



Pin Configuration:

1. Base
2. Emitter
3. Collector

Absolute Maximum Ratings:

Description	Symbol		BC847B	Units
Collector-Emitter Voltage ($V_{BE} = 0$)	V_{CES}	Max.	50	V
Collector-Emitter Voltage (Open Base)	V_{CEO}		45	
Collector Current (Peak Value)	I_{CM}		200	mA
Total Power Dissipation up to $T_a = 25^\circ\text{C}$	P_{tot}		250	mW
Junction Temperature	T_j		150	$^\circ\text{C}$
Small-Signal Current Gain $I_C = 2\text{mA}; V_{CE} = 5\text{V}; f = 1\text{kHz}$	h_{fe}	Min.	125	-
Transition Frequency at $f = 100\text{MHz}$ $I_C = 10\text{mA}; V_{CE} = 5\text{V}$	f_T		>100	MHz
Noise Figure at $R_S = 2\text{k}\Omega$ $I_C = 200\text{mA}; V_{CE} = 5\text{V}$ $f = 1\text{kHz}; B = 200\text{Hz}$	F	Typ.	2	dB

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

Description	Symbol		BC847B	Units
Collector-Base Voltage (Open Emitter)	V_{CBO}	Max.	50	V
Collector-Emitter Voltage ($V_{BE} = 0$)	V_{CES}			
Collector-Emitter Voltage (Open Base)	V_{CEO}			
Emitter-Base Voltage (Open Collector)	V_{EBO}			
Collector Current (DC)	I_C		100	mA

SMD NPN Transistor



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

Description	Symbol		BC847B	Units
Collector Current (Peak Value)	I_{CM}	Max.	200	mA
Emitter Current (Peak Value)	$-I_{EM}$			
Base Current (Peak Value)	I_{BM}			
Total Power Dissipation upto $T_a: 25^\circ\text{C}$	P_{tot}		250	mW
Storage Temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$
Junction Temperature	T_j	Max.	150	

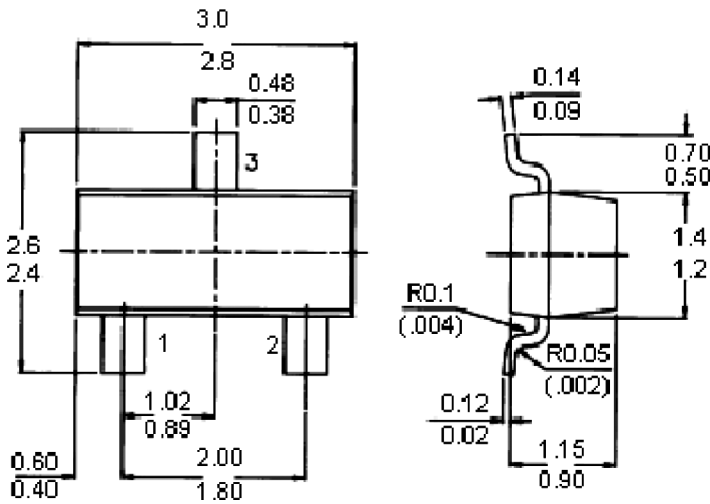
Thermal Resistance

From Junction to Ambient	$R_{th(j-a)}$	=	500	K/W
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Characteristics ($T_j = 25^\circ\text{C}$ unless otherwise specified)

Collector Cut off Current $I_E = 0; V_{CB} = 30V$ $I_E = 0; V_{CB} = 30V; T_j = 150^\circ\text{C}$	I_{CBO}	<	15 5	nA μA
Base-Emitter Voltage $I_C = 2\text{mA}; V_{CE} = 5V$	V_{BE}	Typ.	660	mV
$I_C = 10\text{mA}; V_{CE} = 5V$	V_{BE}	<	580 to 700 770	
Saturation Voltage	$V_{CE(sat)}$	Typ.	90	
$I_C = 10\text{mA}; I_B = 0.5\text{mA}$ $I_C = 100\text{mA}; I_B = 5\text{mA}$	$V_{BE(sat)}$ $V_{CE(sat)}$ $V_{BE(sat)}$	< Typ. Typ. < Typ.	250 700 200 600 900	
Collector Capacitance at $f = 1\text{MHz}$ $I_E = I_e = 0; V_{CB} = 10V$	C_C	Typ.	2.5	pF
Transition Frequency at $f = 100\text{MHz}$ $I_C = 10\text{mA}; V_{CE} = 5V$	f_T	>	100	MHz
Noise Figure at $R_S = 2\text{KW}$ $I_C = 200\mu\text{A}; V_{CE} = 5V;$ $f = 1\text{kHz}; B = 200\text{Hz}$	F	Typ. Max.	2 10	dB
DC Current Gain $I_C = 10\text{mA}; V_{CE} = 5V$ $I_C = 2\text{mA}; V_{CE} = 5V$	h_{FE}	Typ. > Typ. <	150 200 290 450	-
Small Signal Current Gain at $f = 1\text{kHz}$ $I_C = 2\text{mA}; V_{CE} = 5V$	h_{fe}	Min. Max.	125 900	-

SMD NPN Transistor



Pin Configuration:

1. Base
2. Emitter
3. Collector

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, SOT-23	BC847B

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