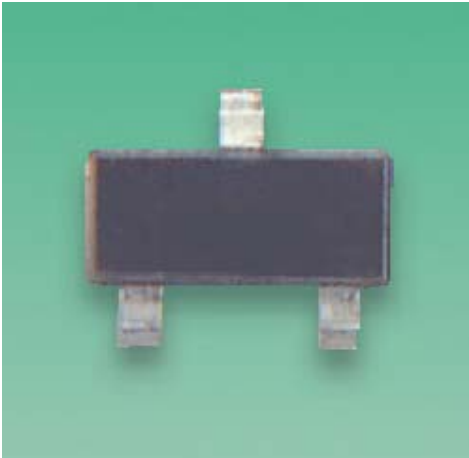


BC847B



General Purpose SMD NPN Transistors

SOT-23

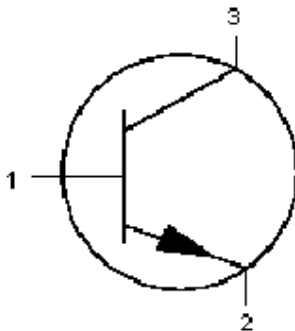


Features:

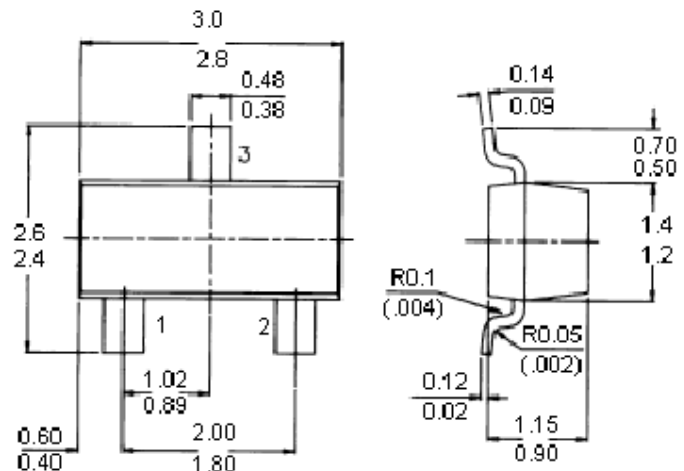
- Silicon planar epitaxial transistors.
- General purpose NPN transistors.

Pin Configuration:

1. Base
2. Emitter
3. Collector



Package Outline Details



Dimensions : Millimetres

Absolute Maximum Ratings

	Symbol		BC847B	Units
Collector-Emitter Voltage ($V_{BE} = 0$)	V_{CES}	Maximum	50	V
Collector-Emitter Voltage (Open Base)	V_{CEO}		45	
Collector Current (Peak Value)	I_{CM}		200	mA
Total Power Dissipation up to $T_{amb} = 25^{\circ}C$	P_{tot}		250	mW
Junction Temperature	T_j		150	$^{\circ}C$



BC847B



General Purpose SMD NPN Transistors

Absolute Maximum Ratings

	Symbol		BC847B	Units
Small-Signal Current Gain $I_C = 2\text{mA}; V_{CE} = 5\text{V}; f = 1\text{kHz}$	h_{fe}	Minimum	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	Typical	2	dB

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

	Symbol		BC847B	Units
Collector-Base Voltage (Open Emitter)	V_{CBO}	Maximum	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	Maximum	100	mA
Collector Current (Peak Value)	I_{CM}			
Emitter Current (Peak Value)	$-I_{EM}$			
Base Current (Peak Value)	I_{BM}			
Total Power Dissipation upto $T_{amb}: 25^\circ\text{C}$	P_{tot}		250	mW
Storage Temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$
Junction Temperature	T_j	Maximum	150	
Thermal Resistance				
From Junction to Ambient	$R_{th(j-a)}$	=	500	K/W

Characteristics ($T_j = 25^\circ\text{C}$ unless otherwise specified)

Collector Cut off Current $I_E = 0; V_{CB} = 30\text{V}$ $I_E = 0; V_{CB} = 30\text{V}; T_j = 150^\circ\text{C}$	I_{CBO}	<	15 5	nA μA
Base-Emitter Voltage $I_C = 2\text{mA}; V_{CE} = 5\text{V}$	V_{BE}	Typical	660	mV
$I_C = 10\text{mA}; V_{CE} = 5\text{V}$	V_{BE}	<	580 to 700 770	
Saturation Voltage	$V_{CE(sat)}$	Typical	90	
$I_C = 10\text{mA}; I_B = 0.5\text{mA}$	$V_{BE(sat)}$	<	250	
	$V_{BE(sat)}$	Typical	700	
	$V_{CE(sat)}$	Typical	200	
$I_C = 100\text{mA}; I_B = 5\text{mA}$	$V_{CE(sat)}$	<	600	
	$V_{BE(sat)}$	Typical	900	



BC847B



General Purpose SMD NPN Transistors

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

	Symbol		BC847B	Unit
Collector Capacitance at $f = 1\text{MHz}$ $I_E = I_e = 0; V_{CB} = 10\text{V}$	C_C	Typical	2.5	pF
Transition Frequency at $f = 100\text{MHz}$ $I_C = 10\text{mA}; V_{CE} = 5\text{V}$	f_T	>	100	MHz
Noise Figure at $R_S = 2\text{KW}$ $I_C = 200\mu\text{A}; V_{CE} = 5\text{V};$ $f = 1\text{kHz}; B = 200\text{Hz}$	F	Typical Maximum	2 10	dB
DC Current Gain $I_C = 10\text{mA}; V_{CE} = 5\text{V}$ $I_C = 2\text{mA}; V_{CE} = 5\text{V}$	h_{FE}	Typical > Typical <	150 200 290 450	-
Small Signal Current Gain at $f = 1\text{kHz}$ $I_C = 2\text{mA}; V_{CE} = 5\text{V}$	h_{fe}	Minimum Maximum	125 900	-

Specifications

V_{CEO} (V)	I_C (mA) Maximum	F (dB) Maximum	P_{tot} (mW)	Device Marking	Part Number
45	100	10	250	IF	BC847B



BC847B



General Purpose SMD NPN Transistors

Notes:

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