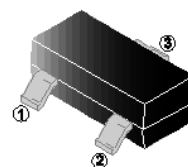


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BC807 (PNP)

## SOT-23

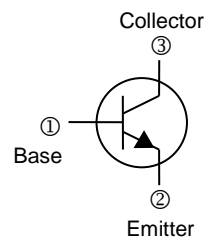


## CLASSIFICATION OF $h_{FE}$

Product-Rank	Range	Marking
BC817-16-C	100~250	6A
BC817-25-C	160~400	6B
BC817-40-C	250~600	6C

## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch



## ORDER INFORMATION

Part Number	Type
BC817-16-C	Lead (Pb)-free and Halogen-free
BC817-25-C	
BC817-40-C	

## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise noted.)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current-Continuous	$I_C$	500	mA
Collector Power Dissipation <sup>1</sup>	$P_C$	300	mW
Thermal Resistance, Junction-Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction & Storage Temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

**CHARACTERISTICS** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted.)

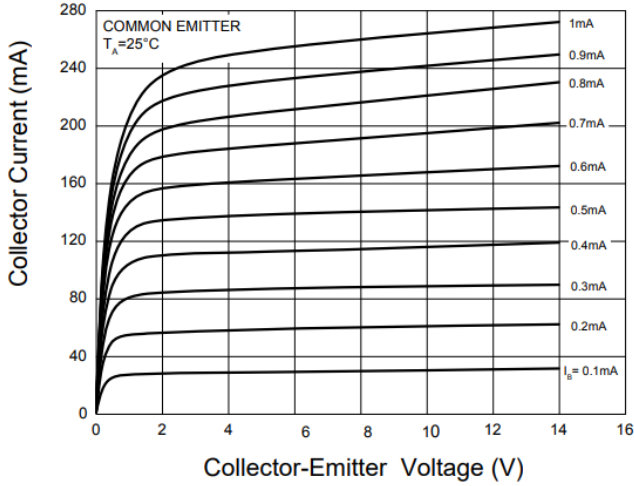
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{CBO}$	50	-	-	V	$I_C=10\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{CEO}$	45	-	-		$I_C=10\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{EBO}$	5	-	-		$I_E=1\mu\text{A}, I_C=0$
Collector Cut-off Current	$I_{CBO}$	-	-	0.1	$\mu\text{A}$	$V_{CB}=45\text{V}, I_E=0$
Emitter Cut-off Current	$I_{EBO}$	-	-	0.1	$\mu\text{A}$	$V_{EB}=4\text{V}, I_C=0$
DC Current Gain <sup>2</sup>	$h_{FE}$	100	-	600		$V_{CE}=1\text{V}, I_C=100\text{mA}$
		40	-	-		$V_{CE}=1\text{V}, I_C=500\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.7	V	$I_C=500\text{mA}, I_B=50\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	1.2		$I_C=500\text{mA}, I_B=50\text{mA}$
Base-Emitter Voltage	$V_{BE}$	-	-	1.2	V	$V_{CE}=1\text{V}, I_C=500\text{mA}$
Collector Capacitance	$C_{ob}$	-	10	-	pF	$V_{CB}=10\text{V}, f=1\text{MHz}$
Transition Frequency	$f_T$	100	-	-	MHz	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$

Notes:

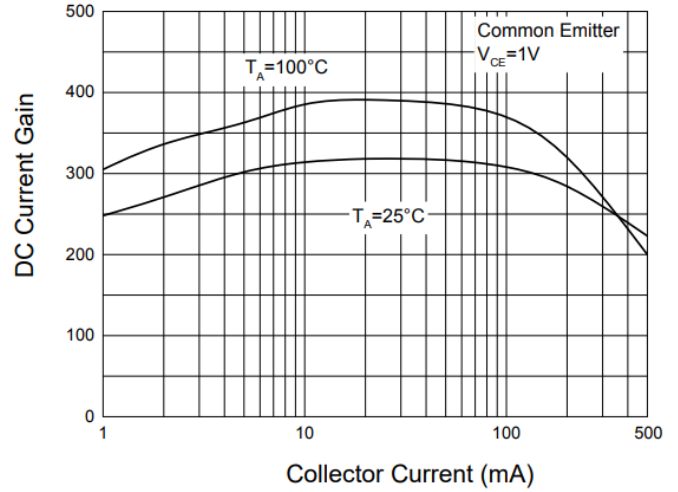
1. Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
2. Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

**CHARACTERISTIC CURVES**

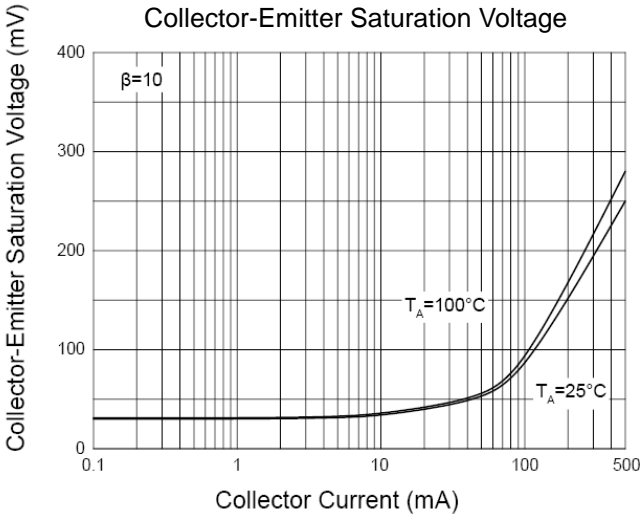
Static Characteristics



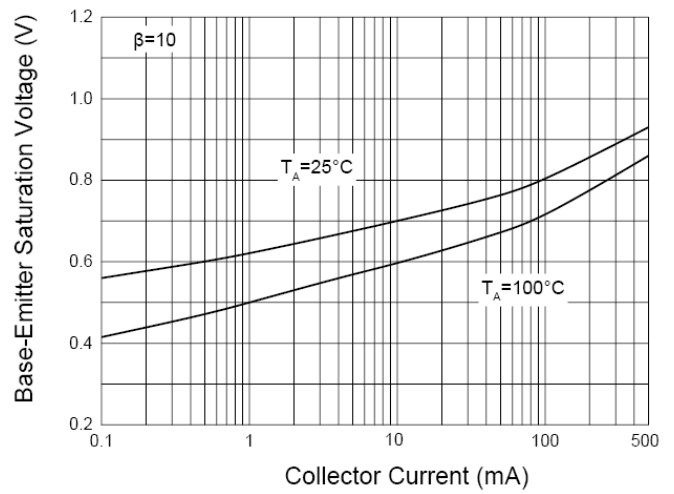
DC Current Gain Characteristics



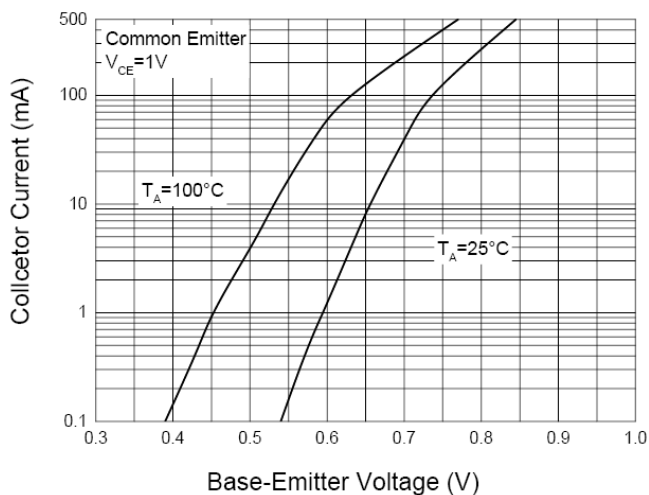
Collector-Emitter Saturation Voltage



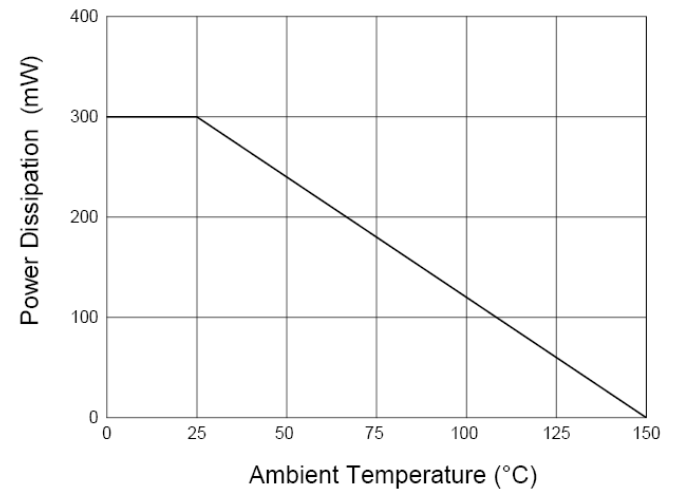
Base-Emitter Saturation Voltage



Base-Emitter Voltage Characteristics

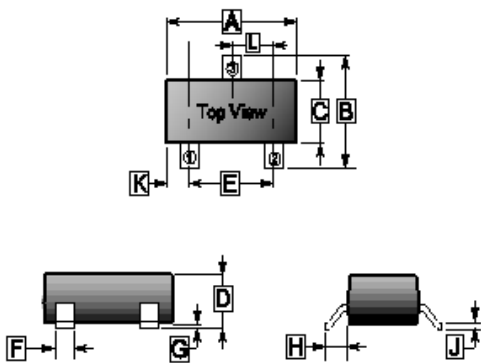


Power Derating Curve



**PACKAGE OUTLINE DIMENSIONS**

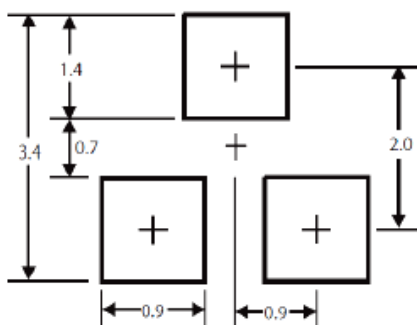
**SOT-23**



REF.	Millimeter	
	Min.	Max.
A	2.65	3.10
B	2.10	3.00
C	1.10	1.80
D	0.89	1.40
E	1.70	2.30
F	0.28	0.55
G	-	0.18
H	0.55 REF.	
J	0.05	0.26
K	0.60 REF.	
L	0.95 TYP.	

**MOUNTING PAD LAYOUT**

**SOT-23**



\*Dimensions in millimeters