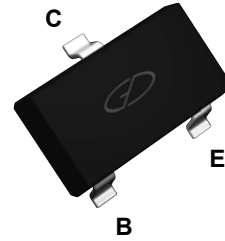


### Features

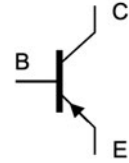
- Complementary to BC817
- Power dissipation of 300mW
- High stability and high reliability

### Mechanical Data

- SOT-23 small outline plastic package
- Epoxy UL: 94V-0
- Mounting position: any



SOT-23



Schematic Diagram

### Absolute Maximum Ratings (T<sub>A</sub>=25 °C unless otherwise noted)

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-45	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current - Continuous	I <sub>C</sub>	-500	mA
Collector Power Dissipation	P <sub>C</sub>	300	mW
Junction Temperature	T <sub>J</sub>	-55 to +150	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C
Thermal Resistance from Junction to Ambient	R <sub>θJA</sub>	417	°C/W

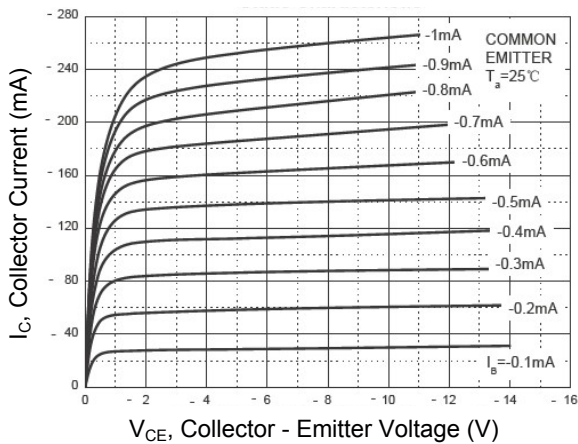
### CLASSIFICATION OF h<sub>FE</sub> and Marking Information

Rank	BC807-16	BC807-25	BC807-40
Range	100-250	160-400	250-600
Marking	5A	5B	5C

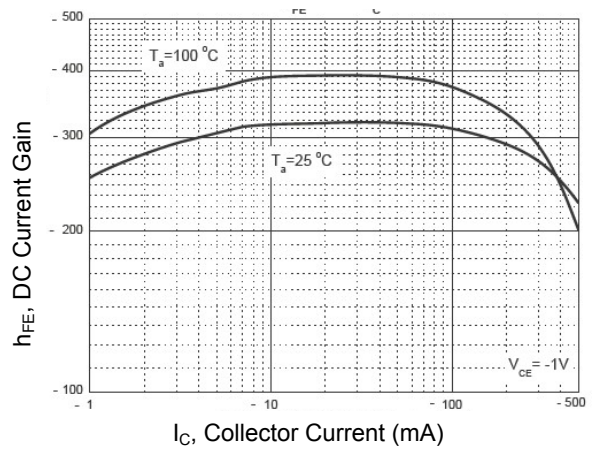
**Electrical Characteristics** ( $T_A=25\text{ }^\circ\text{C}$  unless otherwise noted)

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

**Electrical Characteristic Curves**

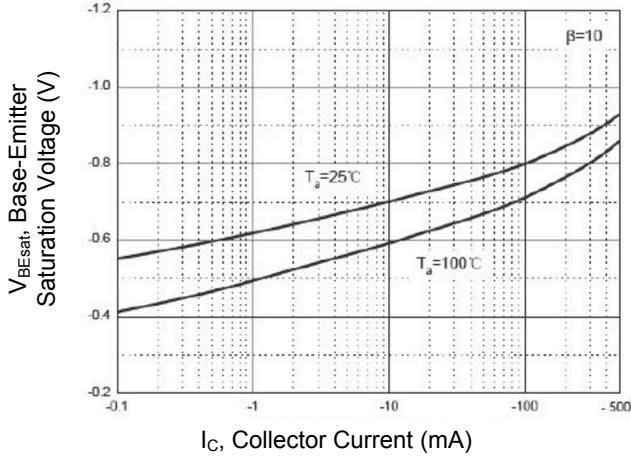


**Figure 1. Static Characteristics**

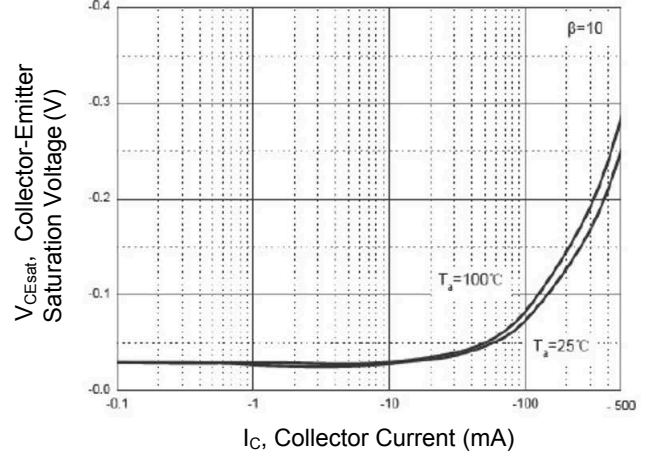


**Figure 2.  $h_{FE}$  vs.  $I_C$**

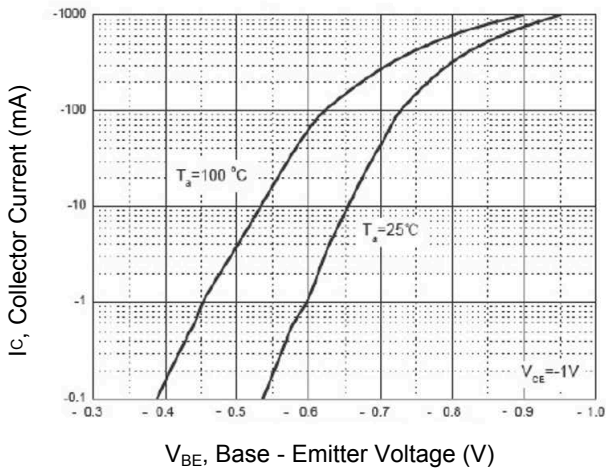
**Electrical Characteristic Curves**



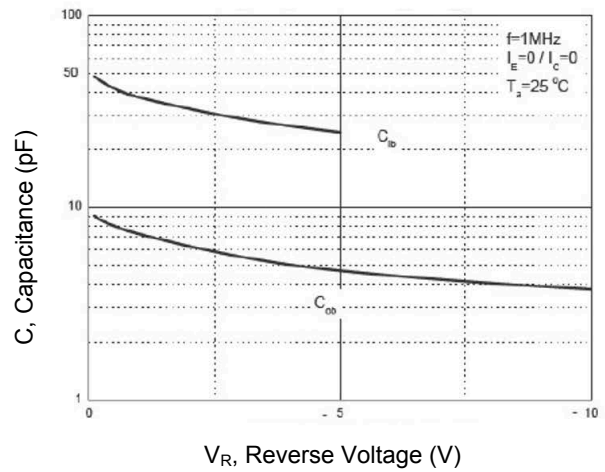
**Figure 3. Base - Emitter Saturation Voltage vs. Collector Current**



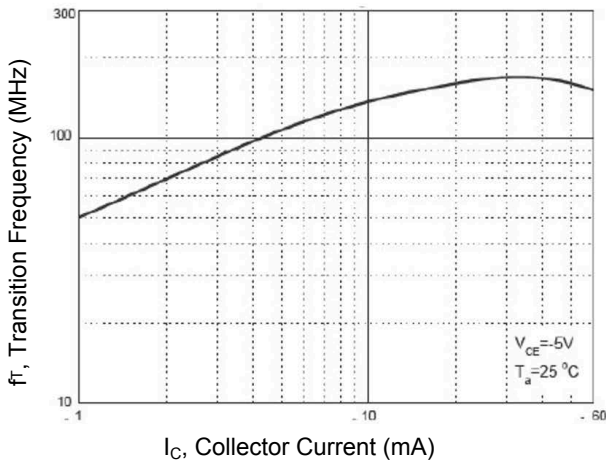
**Figure 4. Collector - Emitter Saturation Voltage vs. Collector Current**



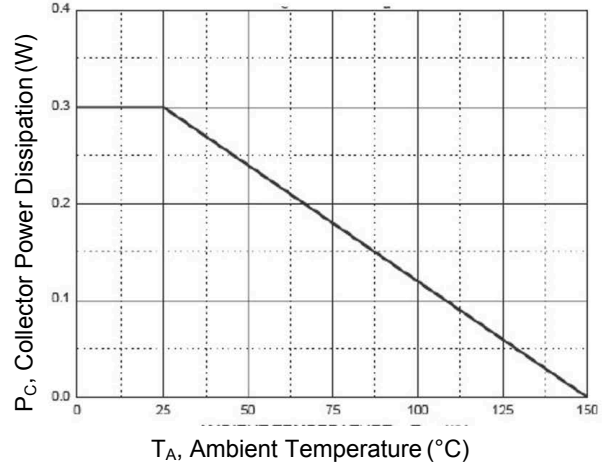
**Figure 5. Collector Current vs. Base - Emitter Voltage**



**Figure 6. Capacitance Characteristics**

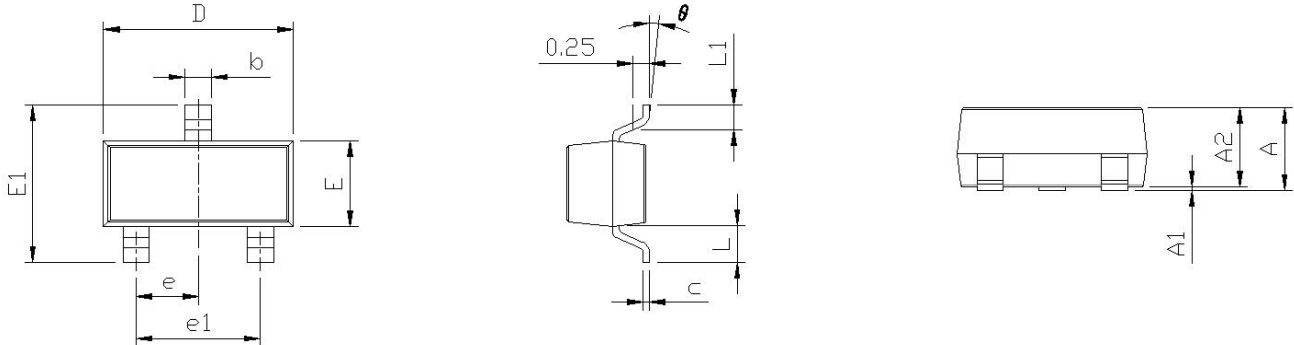


**Figure 7. Transition Frequency vs. Collector Current**



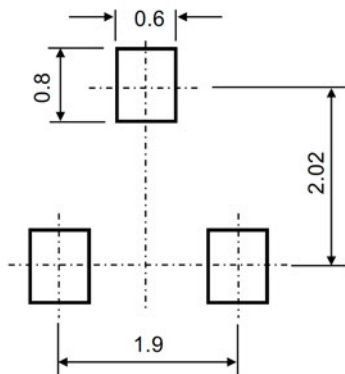
**Figure 8. Power Dissipation vs Ambient Temperature**

**Package Outline Dimensions (SOT-23)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

**Suggested Pad Layout**



**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only