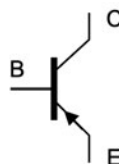


Features

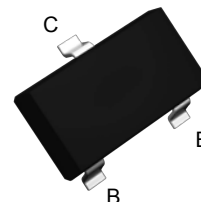
- Complementary to BC817
- Power dissipation of 300mW
- High stability and high reliability

Mechanical Data

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



Schematic Diagram



SOT-23

Absolute Maximum Ratings (T_A=25 °C unless otherwise noted)

Parameter	Symbol	Rating	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	P _C	300	mW
Junction Temperature	T _J	-55 to +150	°C
Storage Temperature	T _{STG}	-55 to +150	°C
Thermal Resistance from Junction to Ambient	R _{θJA}	417	°C/W

CLASSIFICATION OF h_{FE} and Marking Information

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

Electrical Characteristics ($T_A=25^\circ\text{C}$ 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

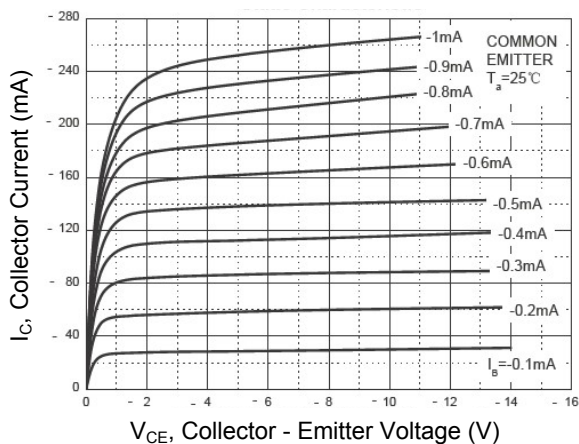


Figure 1. Static Characteristics

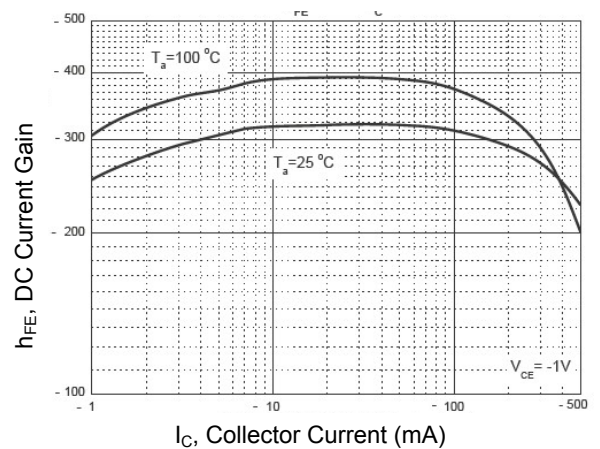


Figure 2. h_{FE} vs. I_C

Electrical Characteristic Curves

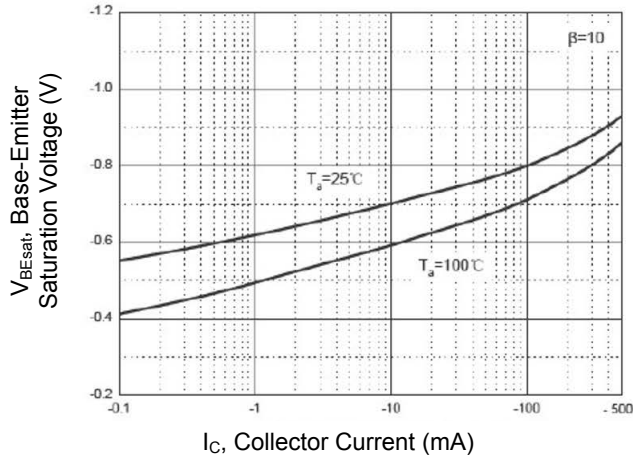


Figure 3. Base - Emitter Saturation Voltage vs. Collector Current

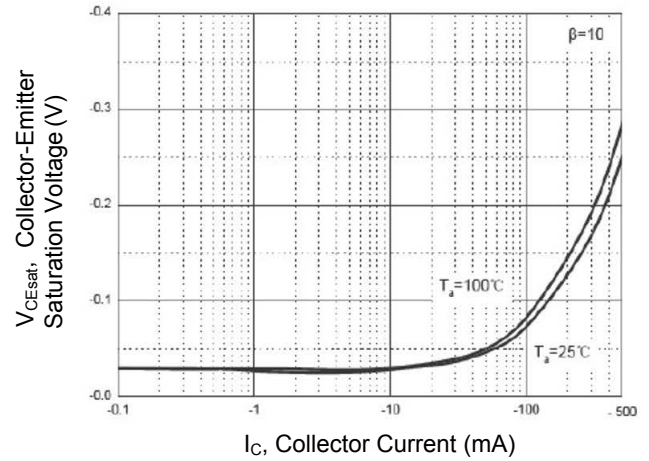


Figure 4. Collector - Emitter Saturation Voltage vs. Collector Current

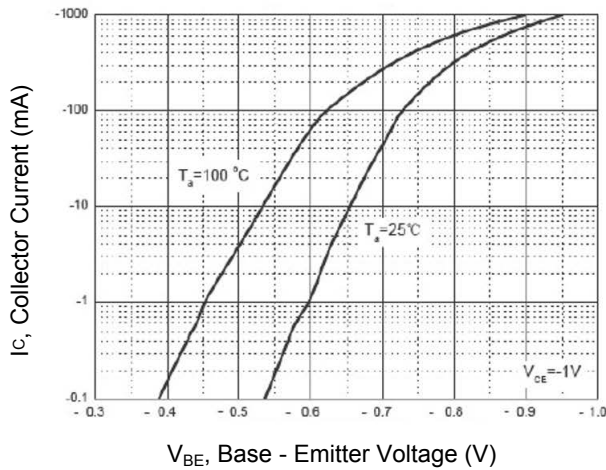


Figure 5. Collector Current vs. Base - Emitter Voltage

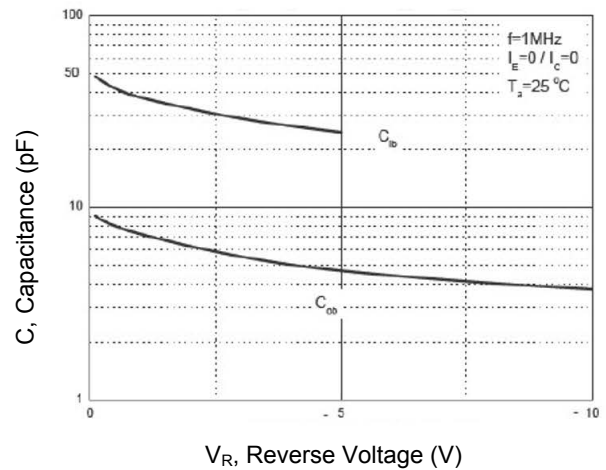


Figure 6. Capacitance Characteristics

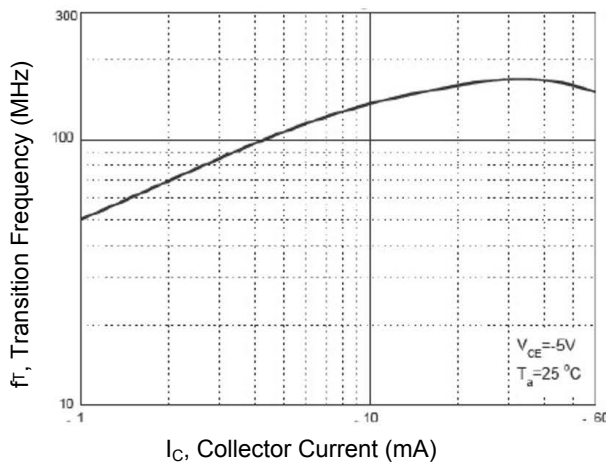


Figure 7. Transition Frequency vs. Collector Current

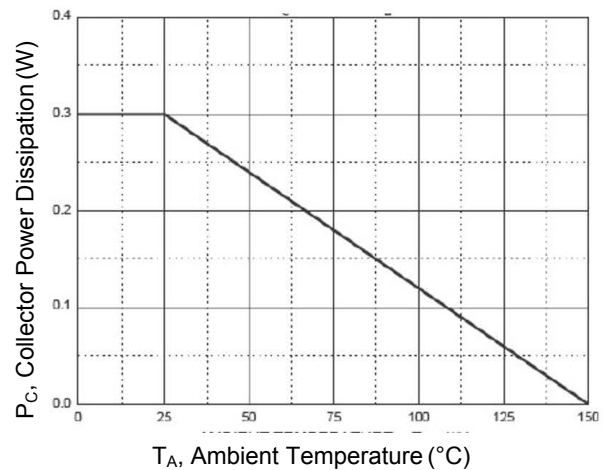
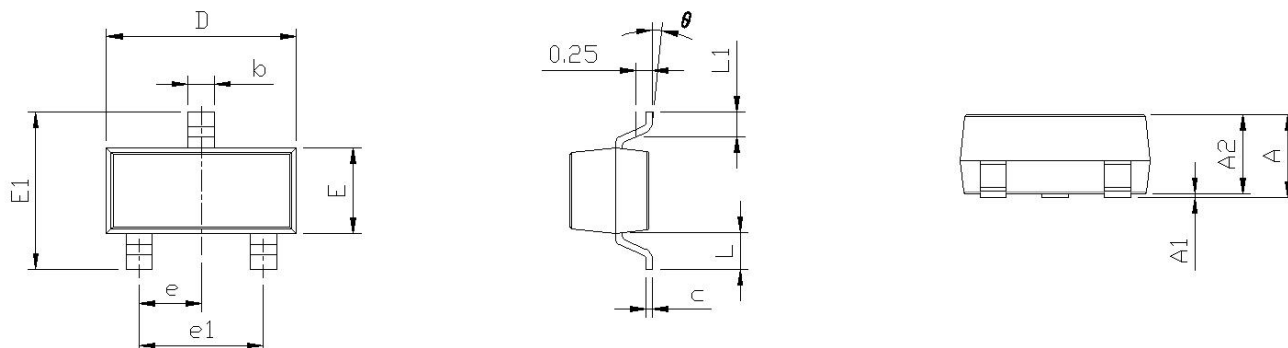


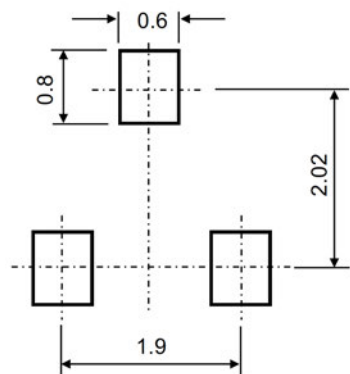
Figure 8. Power Dissipation vs Ambient Temperature

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