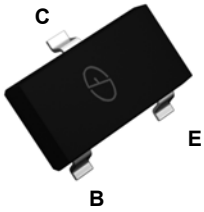
GOOD-ARK
SEMICONDUCTOR

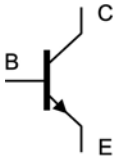
GSBC817
NPN Transistor

Features

- High collector current
- Complementary to BC807
- SOT-23 plastic package
- RoHS compliant



SOT-23



Schematic Diagram

Applications

- Switching application
- General power amplifier

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

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	50	V
Collector to Emitter Voltage	V_{CEO}	45	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current-Continuous	I_C	500	mA
Collector Current-Peak Collector Current	I_{CM}	1.0	A
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction Temperature	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Classification Of $h_{FE(1)}$

h_{FE} Classification	GSBC817	GSBC817-16	GSBC817-25	GSBC817-40
h_{FE} Range	100 to 600	100 to 250	160 to 400	250 to 600
Marking	6D	6A	6B	6C

Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=10μA, I_E=0	50	-	-	V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=10mA, I_B=0	45	-	-	V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=10μA, I_C=0	5.0	-	-	V
Collector Cut-Off Current	I_{CBO}	V_{CB}=20V, I_E=0	-	-	0.1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=5.0V, I_E=0	-	-	0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=1.0V, I_C=100mA	100	-	600	-
	$h_{FE(2)}$	V_{CE}=1.0V, I_C=500mA	40	-	-	-
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=500mA, I_B=50mA	-	-	0.7	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=500mA, I_B=50mA	-	-	1.2	V
Base to Emitter Voltage	V_{BE}	V_{CE}=1.0V, I_C=500mA	-	-	1.2	V
Transition Frequency	f_T	V_{CE}=5.0V, I_C=10mA F=100MHz	100	-	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, F=1.0MHz	-	5.0	-	pF

Typical Characteristic Curves

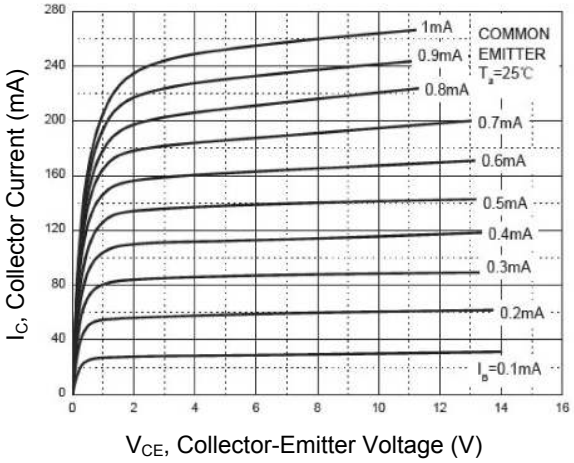


Figure 1. Static Characteristic

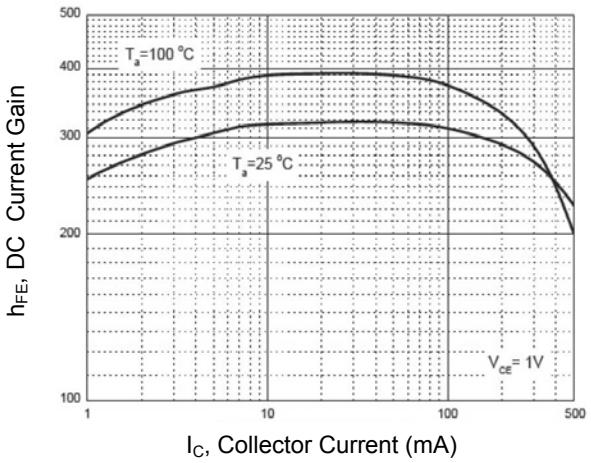


Figure 2. DC Current Gain vs. Collector Current

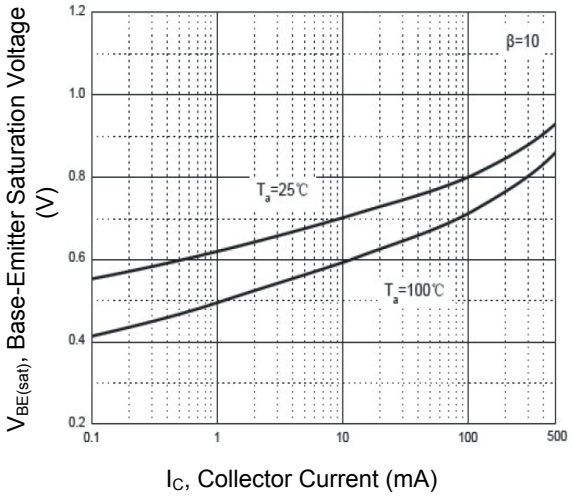


Figure 3. Base-Emitter Saturation Voltage vs. Collector Current

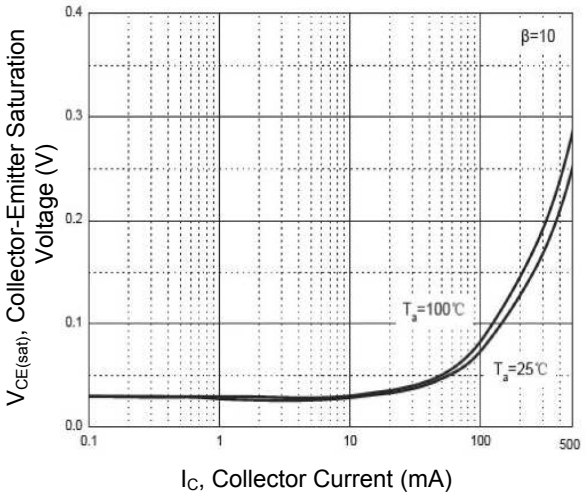


Figure 4. Collector-Emitter Saturation Voltage vs. Collector Current

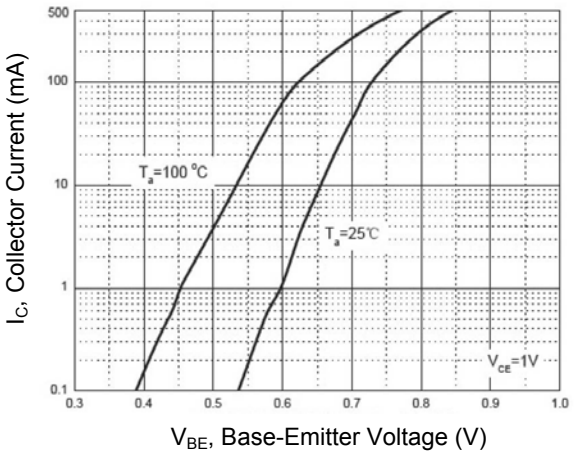


Figure 5. Collector Current vs. Base-Emitter Voltage

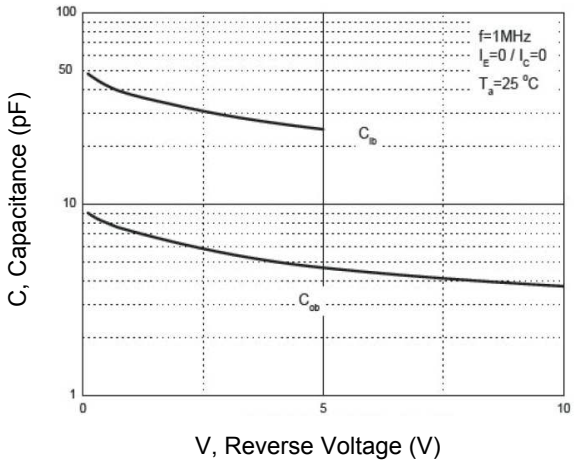


Figure 6. Capacitance Characteristics

Typical Characteristic Curves

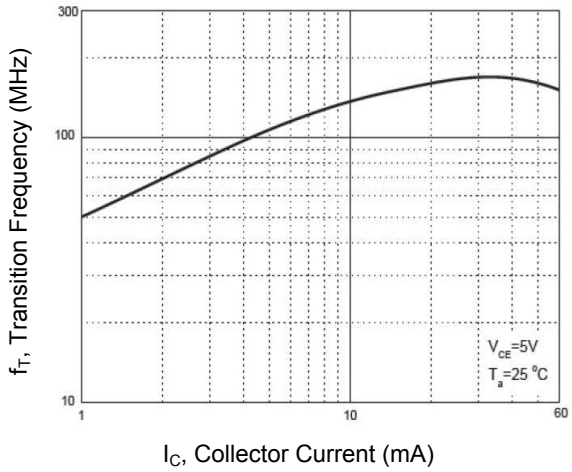


Figure 7. Transition Frequency vs. Collector Current

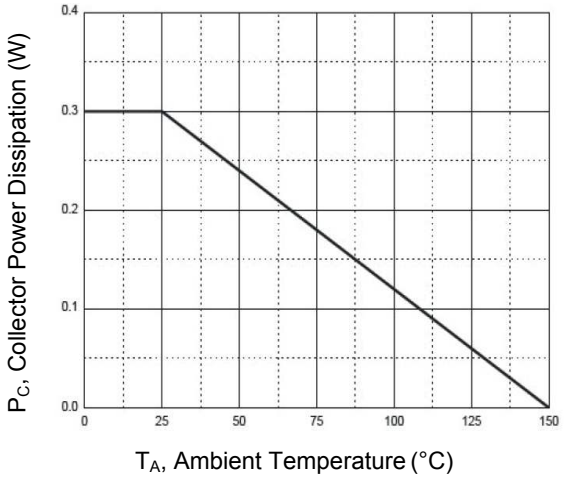
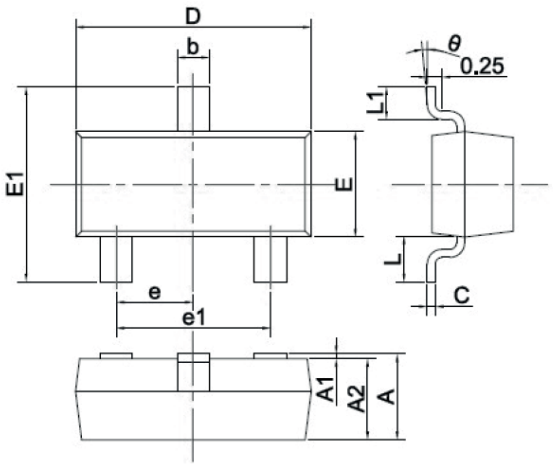


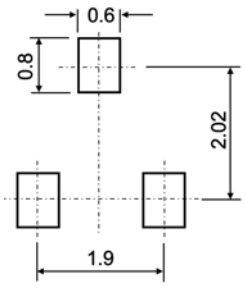
Figure 8. Power Dissipation vs. Ambient Temperature

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°

Recommended Pad Layout



Note:

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference purposes only

Order Information

Device	Package	Reel Size	Quantity	HSF Status
GSBC817 series	SOT-23	7 inches	3,000pcs / Reel	RoHS Compliant