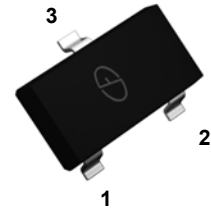


Feature

- Epitaxial planar die construction
- SOT-323 small outline plastic package
- Ideally for automatic insertion



SOT-323

1. BASE
2. EMITTER
- 3.. COLLECTOR

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

Parameter	Symbol	Max.	Unit
Collector-Base Voltage	V _{CB0}	-50	V
Collector-Emitter Voltage	V _{CEO}	-45	V
Emitter -Base Voltage	V _{EBO}	-5.0	V
Collector Current-Continuous	I _C	-500	mA
Collector Power Dissipation	P _C	200	mW
Thermal Resistance From Junction To Ambient	R _{θJA}	625	°C/W
Junction Temperature	T _J	-55 To +150	°C
Storage Temperature	T _{STG}	-55 To +150	°C

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

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}	$V_{CB}=-20\text{V}, I_E=0$	-	-100	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$	-	-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	$V_{CE(sat)}$	$I_C=-500\text{mA}, I_B=-50\text{mA}$	-	-0.70	V
Base-Emitter Voltage	$V_{BE(on)}$	$V_{CE}=-1\text{V}, I_C=-500\text{mA}$	-	-1.20	V
Transition Frequency	f_t	$V_{CE}=-5\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$	80	-	MHZ
Collector Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}, I_E=0, f=100\text{MHz}$	-	10	pF

$h_{FE(1)}$ Classifications

Rank	GSBC807-16W	GSBC807-25W	GSBC807-40W
Range	100 - 250	160 - 400	250 - 600
Marking	5A	5B	5C

Typical Characteristic Curves

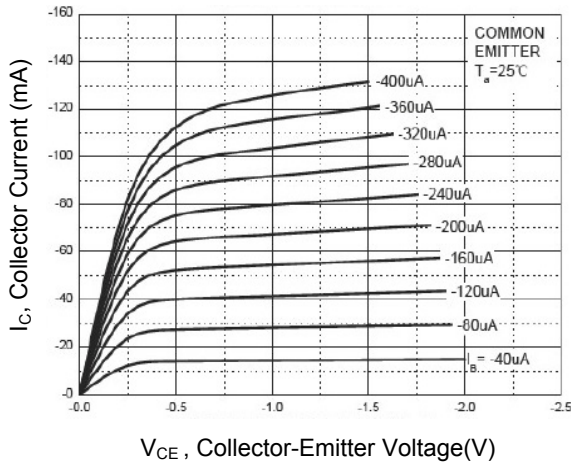


Figure 1. Static Characteristic

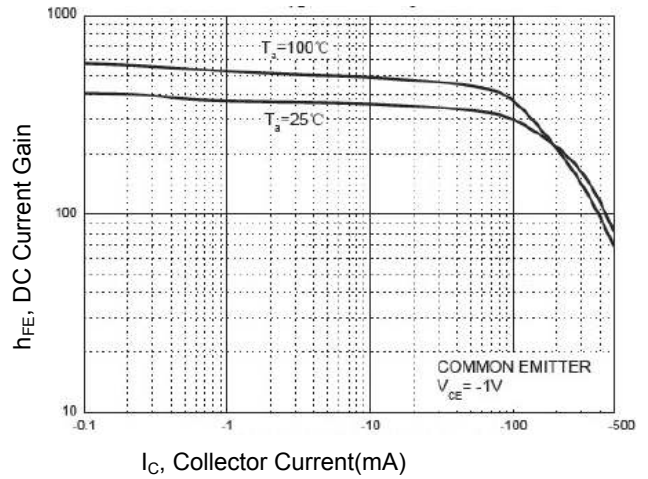


Figure 2. DC Current Gain

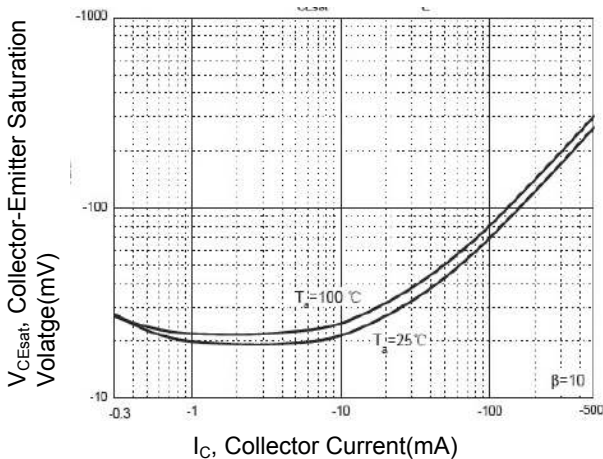


Figure 3. Collector Emitter Saturation Voltage vs. Ic

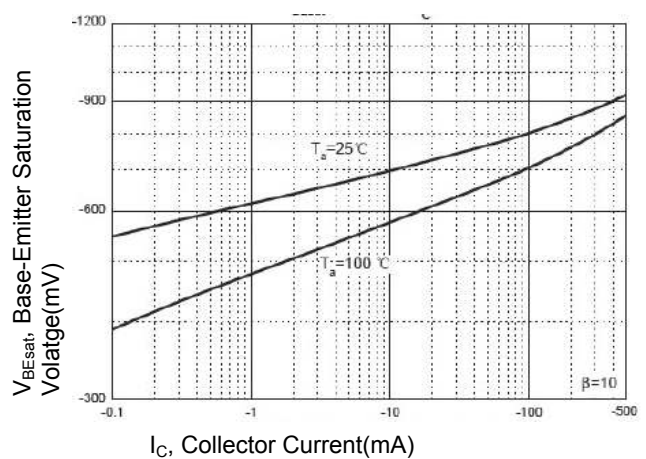


Figure 4. Base Emitter Saturation Voltage vs. Ic

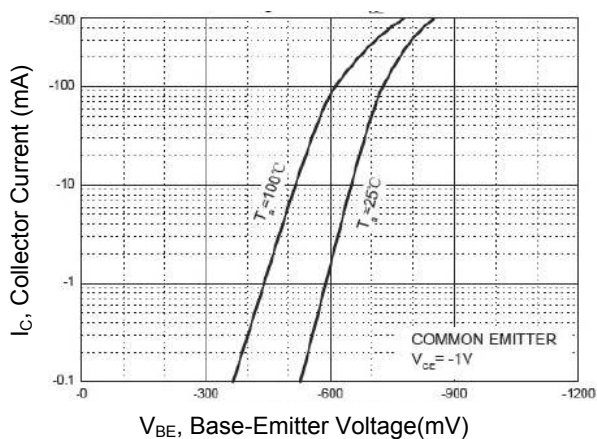


Figure 5. Collector Current vs. Base Emitter Voltage

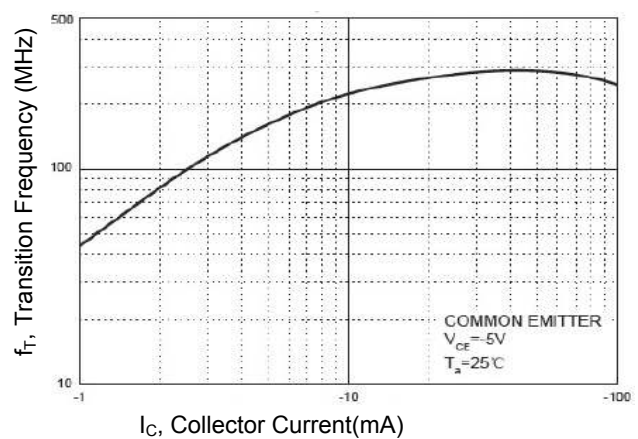


Figure 6. Transition Frequency vs. Ic

Typical Characteristic Curves

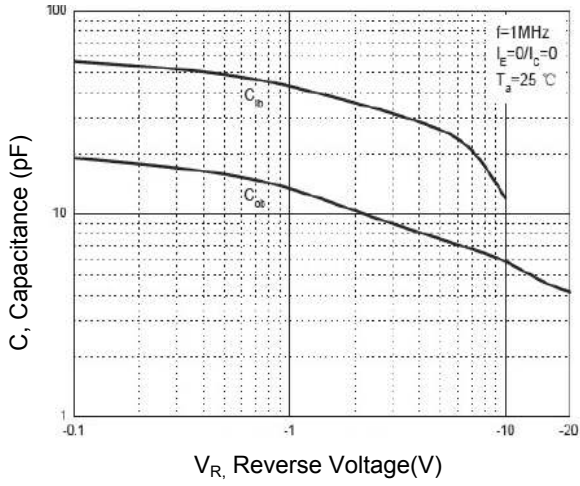


Figure 7. Capacitance Characteristics

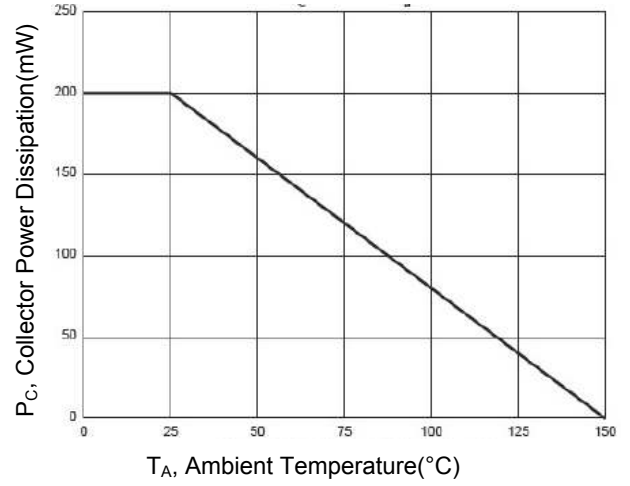
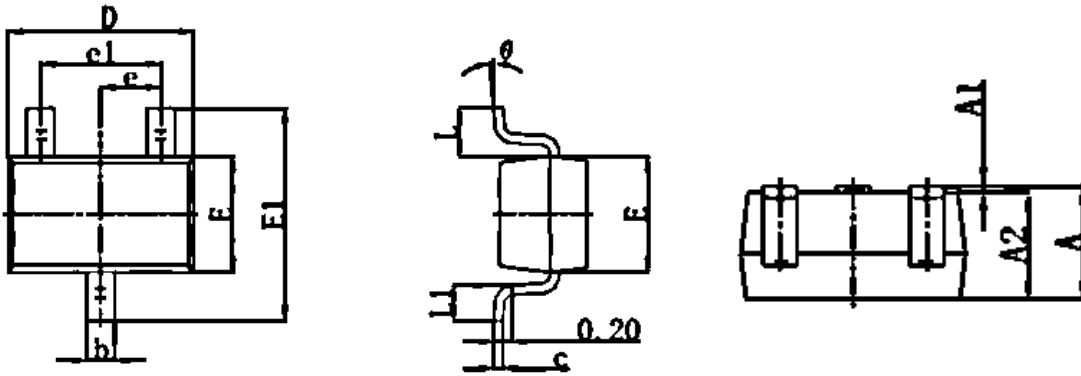


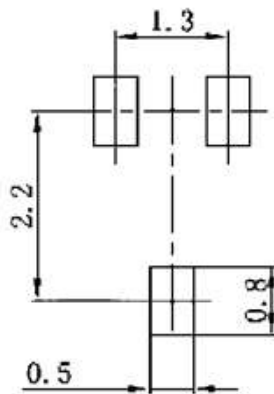
Figure 8. Power Derating

Package Outline Dimensions (SOT-323)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.400	0.006	0.016
c	0.080	0.250	0.003	0.010
D	1.800	2.200	0.071	0.087
E	1.150	1.350	0.045	0.053
E1	2.100	2.450	0.083	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
		0.460	0.010	0.018
θ	0°	8°	0°	8°

Recommended Pad Layout



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