GSTBC847*WF

NPN Transistor

Product Description

This device is designed for a general-purpose application.

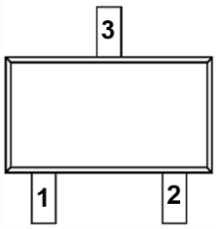
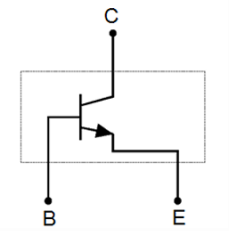
Features

- BV_{CEO} 45V
- I_C 100mA

Mechanical Data

- SOT-323 Package
- RoHS Compliant and Halogen Free

Package and Pin Assignment

SOT-323	Equivalent Circuit
	

Pin	Description	Pin	Description
1	Base	3	Collector
2	Emitter		

Ordering and Marking Information

Part Number	Typical h_{FE}	Marking	Package	Quantity / Reel
GSTBC847AWF	180	1E	SOT-323	3,000 PCS
GSTBC847BWF	290	1F		
GSTBC847CWF	520	1G		

Marking Information

□□

Product Code:

- □□ is1E, 1F or 1G

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

Symbol	Parameter	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	45	V
V_{CBO}	Collector-Base Voltage	50	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	100	mA
P_D	Power Dissipation T_A=25°C [1]	150	mW
$R_{\Theta JA}$	Thermal Resistance, Junction to Ambient	833	°C/W
T_J	Junction Temperature Range	150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

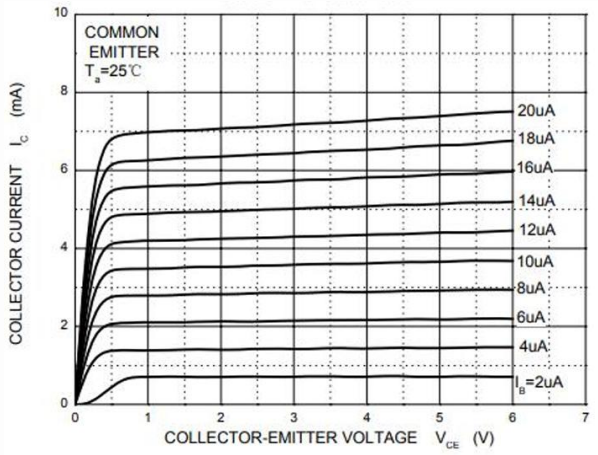
NOTE:
1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

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

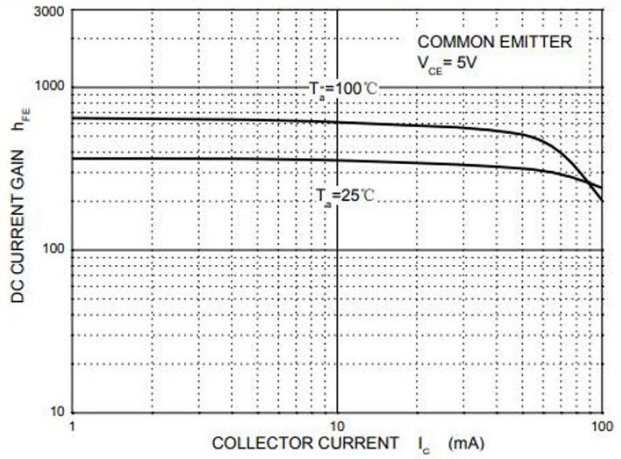
Symbol	Description	Conditions	Min	Max	Unit
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C=10mA, I_B=0mA	45	-	V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C=0.01mA, I_E=0mA	50	-	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E=0.01mA, I_C=0mA	6	-	V
I_{CBO}	Collector Cutoff Current	V_{CB}=30V, I_E=0mA	-	100	nA
I_{EBO}	Emitter Cutoff Current	V_{EB}=5V, I_C=0mA	-	100	nA
h_{FE}	DC Current Gain [2]	V_{CE}=5V, I_C=2mA	200	450	-
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage [2]	I_C=100mA, I_B=5mA	-	0.6	V
$V_{BE(ON)}$	Base-Emitter Voltage [2]	V_{CE}=5V, I_C=10mA	-	0.77	V
f_T	Current Gain - Bandwidth Product	V_{CE}=5V, I_C=10mA, f=100MHz	100	-	MHz
Cob	Output Capacitance	V_{CB}=10.0V, I_E=0, f=1.0MHz	-	4.5	pF

NOTE:
2. Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%

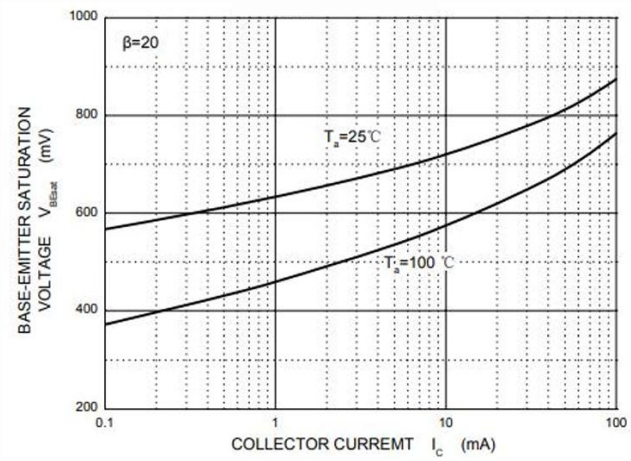
Typical Characteristics (T_A=25℃ unless otherwise specified)



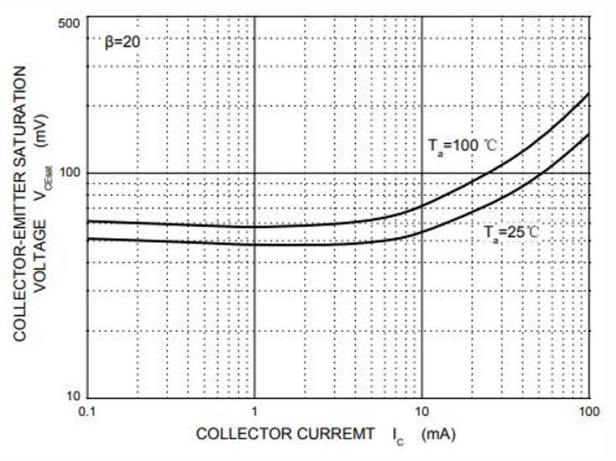
Static Characteristics



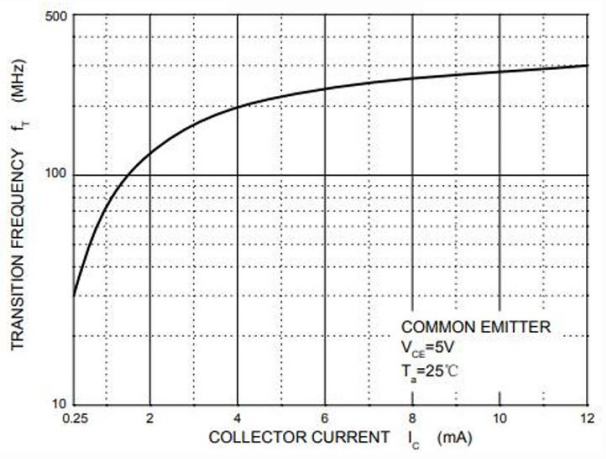
h_{FE} vs. I_C



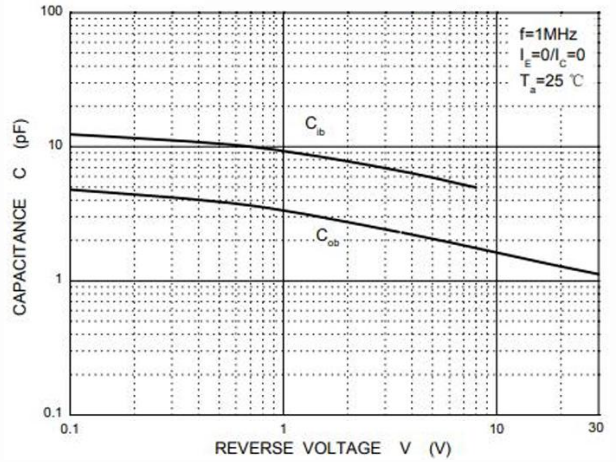
$V_{BE(SAT)}$ vs. I_C



$V_{CE(SAT)}$ vs. I_C



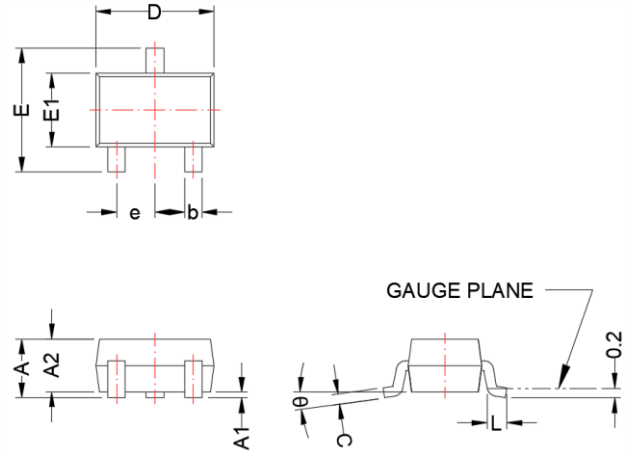
f_T vs. I_C



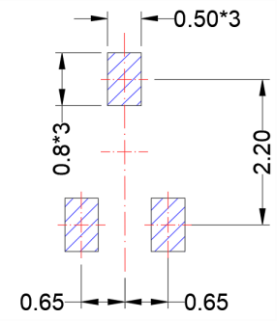
C vs. V

SOT-323

Package Dimension



Recommended Land Pattern



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.80	1.10	0.031	0.043
A1	0.00	0.10	0.000	0.004
A2	0.80	1.00	0.031	0.039
b	0.20	0.40	0.008	0.016
c	0.08	0.26	0.003	0.010
D	1.80	2.20	0.071	0.087
E	1.80	2.40	0.071	0.094
E1	1.15	1.35	0.045	0.053
e	0.65 BSC		0.026 BSC	
L	0.26	0.45	0.010	0.018
θ	0°	8°	0°	8°

NOTE:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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