

GSTBC817CJZF

NPN Transistor

Product Description

This device is designed for a general-purpose application.

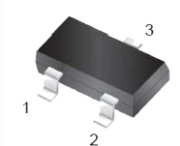
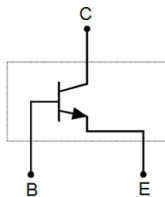
Features

- BV_{CEO} 45V
- Collector Current 500mA

Mechanical Data

- SOT-23. Package
- RoHS Compliant and Halogen Free

Package and Pin Assignment

SOT-23		Equivalent Circuit	
			
Pin	Description	Pin	Description
1	Base	3	Collector
2	Emitter		

Ordering and Marking Information

GS P/N	Package	Marking	Quantity / Reel
GSTBC817CJZF	SOT-23	6C	3,000 PCS
GSTBC817CJZF			
- Product Code: GSTBC817C	- Package Code: JZ for SOT-23	- Green Level: F for RoHS Compliant and Halogen Free	
Marking Information			
- Product Code: 6C			

GSTBC817CJZF

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	5	V
I _C	Collector Current	500	mA
P _D	Power Dissipation T _A =25°C ¹	300	mW
R _{θJA}	Thermal Resistance, Junction to Ambient ¹	417	°C/W
T _J	Junction Temperature Range	-55 to +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 =0.001mA, I _C =0mA	5	-	V
I _{CBO}	Collector Cutoff Current	V _{CB} =45V, I _E =0mA	-	100	nA
I _{EBO}	Emitter Cutoff Current	V _{EB} =4V, I _C =0mA	-	100	nA
h _{FE}	DC Current Gain ²	V _{CE} =1V, I _C =100mA	250	600	-
		V _{CE} =1V, I _C =500mA	40	-	-
V _{CE(SAT)}	Collector-Emitter Saturation Voltage ²	I _C =500mA, I _B =50mA	-	0.7	V
V _{BE(SAT)}	Base-Emitter Saturation Voltage ²	I _C =500mA, I _B =50mA	-	1.2	V
V _{BE}	Base-Emitter Voltage ²	V _{CE} =1V, I _C =500mA	-	1.2	V
f _T	Transition Frequency	V _{CE} =5V, I _C =10mA, f=100MHz	100	-	MHz
C _{obo}	Output Capacitance	V _{CB} =10.0V, I _E =0, f=1.0MHz	Typical 10		pF

NOTE:

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

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

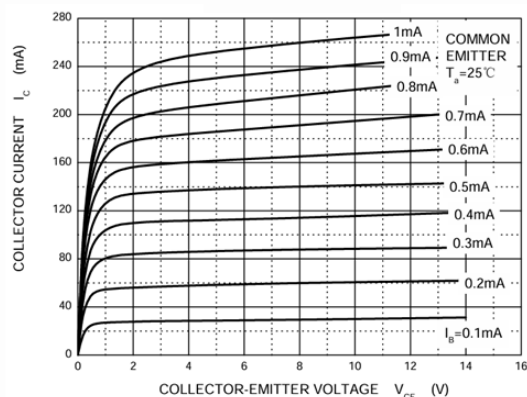


Figure 1. Static Characteristic

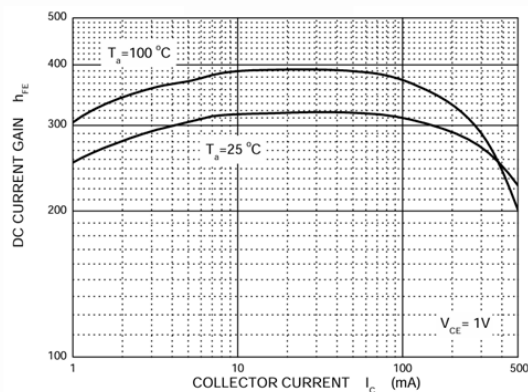


Figure 2. DC Current Gain Characteristics

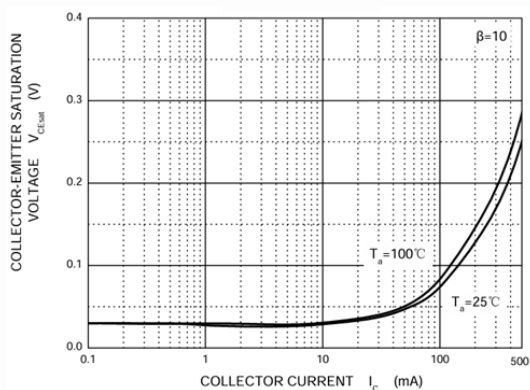


Figure 3. Collector-Emitter Saturation Voltage Characteristics

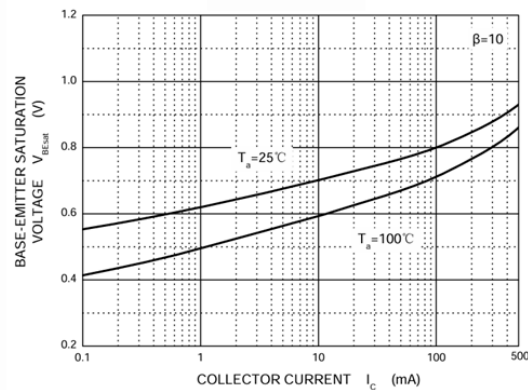


Figure 4. Base-Emitter Saturation Voltage Characteristics

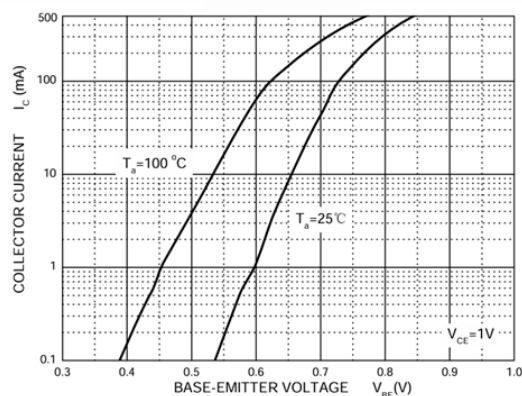


Figure 5. Base-Emitter Voltage Characteristics

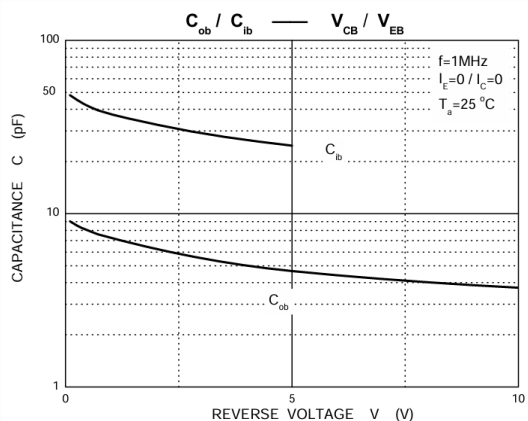


Figure 6. Capacitance Characteristics

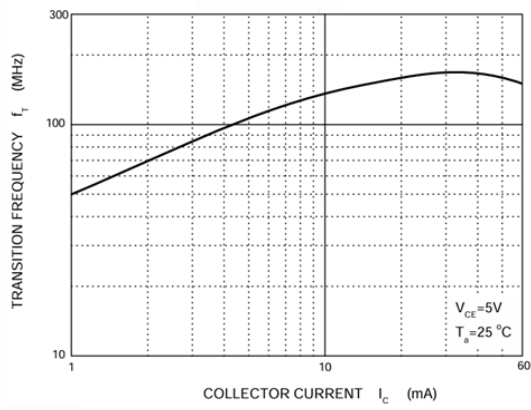


Figure 7. Transition Frequency Characteristics

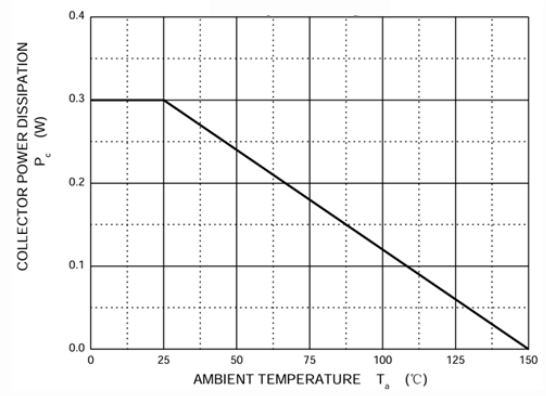
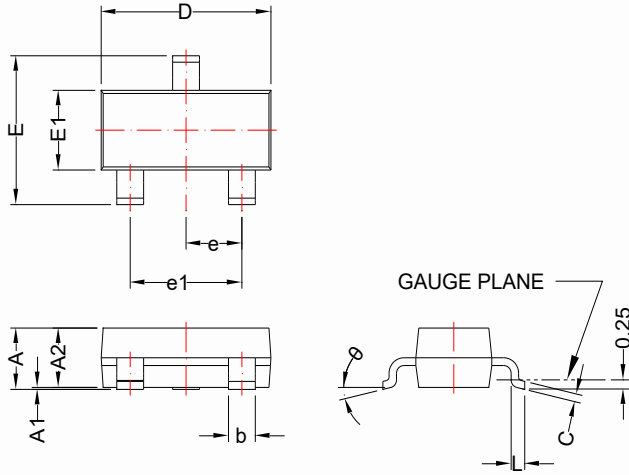


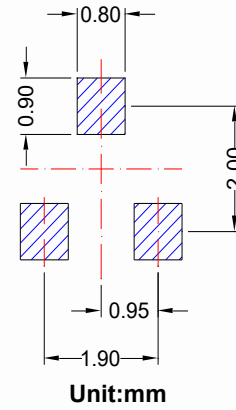
Figure 6. Power Derating Curve

SOT-23

Package Dimension



Recommended Land Pattern



Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.20	0.030	0.047
A1	0.00	0.15	0.000	0.006
A2	0.70	1.10	0.028	0.043
b	0.30	0.60	0.012	0.024
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.2	0.6	0.008	0.024
θ	0°	8°	0°	8°

NOTE:

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

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