

GSTBC847BJ4F

Dual NPN General Purpose Transistor

Product Description

This device is designed as a general-purpose amplifier and switch.

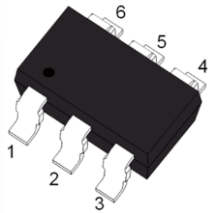
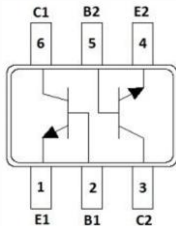
Features

- Collector-Emitter Voltage $V_{CE0} = 45V$
- Collector Current $I_C = 200mA$

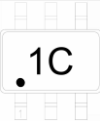
Mechanical Data

- SOT-363 Package
- RoHS Compliant and Halogen Free

Packages & Pin Assignments

SOT-363			Equivalent Circuit		
					
Top View					
Pin	Symbol	Description	Pin	Symbol	Description
1	E1	Emitter 1	4	E2	Emitter 2
2	B1	Base 1	5	B2	Base 2
3	C2	Collector 2	6	C1	Collector 1

Ordering and Marking Information

Ordering Information			
Part Number	Package	Marking Code	Quantity/Reel
GSTBC847BJ4F	SOT-363	1C	3,000 PCS
GSTBC847B ¹ ² - Product Code: GSTBC847B - Package Code: ¹ is J4 for SOT-363 - Green Level: F for RoHS Compliant and Halogen Free			
Marking Information			
 - Product Code: 1C			

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

Symbol	Parameter	Value	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	200	mA
P _D	Power Dissipation T _A =25°C ^{1, 2}	300	mW
R _{θJA}	Thermal Resistance, Junction to Ambient ²	417	°C/W
T _J	Junction Temperature Range	150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

NOTE:

1. The device is mounted on FR-4 PCB, single-sided copper and standard footprint.
2. Maximum combined dissipation.

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

Symbol	Description	Conditions	Min	Max	Unit
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C =10μA, I _E =0	50	-	V
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C =10mA, I _B =0	45	-	V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E =10μA, I _C =0	6	-	V
I _{CBO}	Collector Cut-Off Current	V _{CB} =30V, I _E =0	-	15	nA
I _{EBO}	Emitter Cut-Off Current	V _{EB} =5V, I _C =0	-	100	nA
h _{FE}	DC Current Gain	V _{CE} =5V, I _C =2mA	200	450	
V _{CE(SAT)}	Collector-Emitter Saturation Voltage	I _C =10mA, I _B =0.5mA	-	0.25	V
		I _C =100mA, I _B =5mA	-	0.65	
V _{BE(SAT)}	Base-Emitter Saturation Voltage	I _C =10mA, I _B =0.5mA	-	0.9	V
		I _C =100mA, I _B =5mA	-	1	
V _{BE}	Base-Emitter Voltage	V _{CE} =5V, I _C =2mA	0.58	0.7	V
f _T	Transition Frequency	V _{CE} =5V, I _C =10mA f=100MHz	100		MHz
C _{ob}	Output Capacitance	V _{CB} =10V, I _E =0, f=1MHz	-	4.5	pF

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

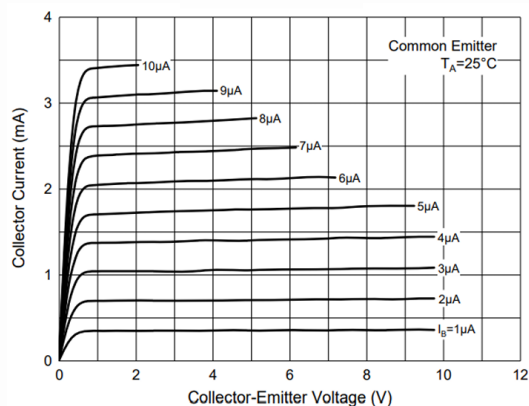


Figure 1. Static Characteristics

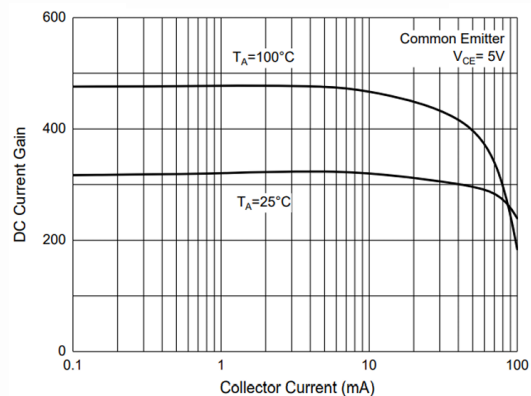


Figure 2. $h_{FE} - I_C$

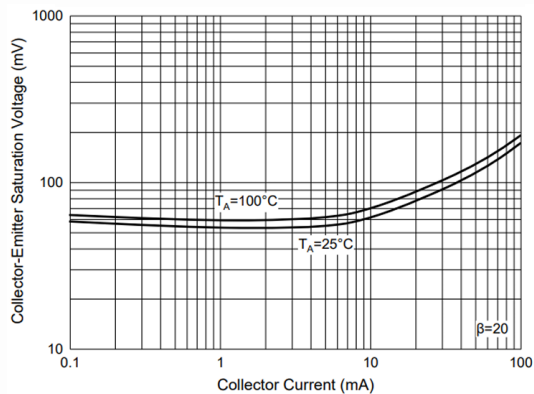


Figure 3. $V_{CE(SAT)} - I_C$

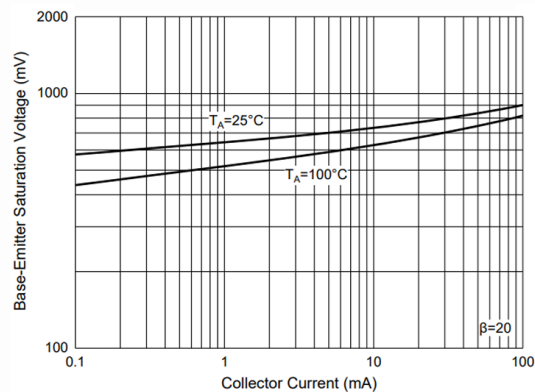


Figure 4. $V_{BE(SAT)} - I_C$

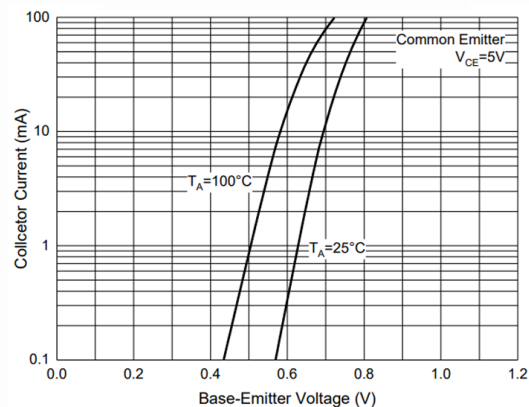


Figure 5. $I_C - V_{BE}$

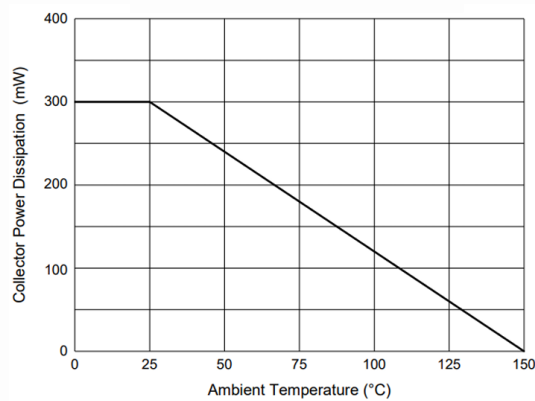
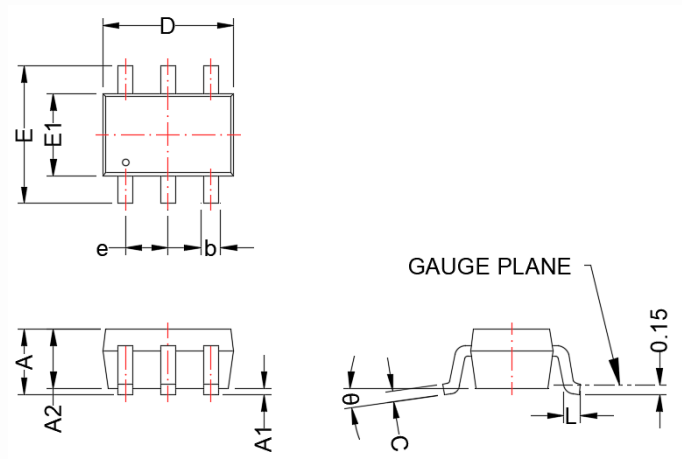


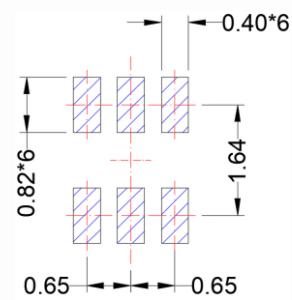
Figure 6. Power Derating Curve

SOT-363

Package Dimension



Recommended Land Pattern



Unit:mm

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	0.70	1.00	0.028	0.039
b	0.15	0.35	0.006	0.014
c	0.08	0.25	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	0.46	0.010	0.018
θ	0°	8°	0°	8°

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

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