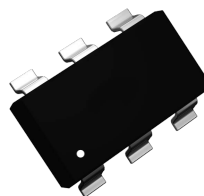


GSBC847BV

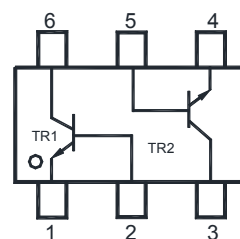
Dual NPN Transistors

Features

- Dual NPN transistors
- Epitaxial die construction
- Ultra-small surface mount package



SOT-563



Schematic Diagram

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	50	V
Collector-Emitter Voltage	V_{CE0}	45	V
Emitter-Base Voltage	V_{EB0}	6	V
Collector Current	I_C	100	mA
Power Dissipation ¹	P_{tot}	150	mW
Operating Junction Temperature Range	T_J	-55 To +150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 To +150	$^{\circ}\text{C}$
Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	833	$^{\circ}\text{C/W}$

Note:

1. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CB0}$	$I_C=10\mu\text{A}$	50	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CE0}$	$I_C=10\text{mA}$	45	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EB0}$	$I_E=1\mu\text{A}$	6	-	-	V
Collector Base Cut-off Current	I_{CBO}	$V_{CB}=30\text{V}$	-	-	15	nA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=2\text{mA}$	200	-	450	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$	-	-	100	mV
		$I_C=100\text{mA}, I_B=5\text{mA}$	-	-	300	
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$	-	700	-	mV
		$I_C=100\text{mA}, I_B=5\text{mA}$	-	900	-	
Base-Emitter Voltage	V_{BE}	$V_{CE}=5\text{V}, I_C=2\text{mA}$	580	-	700	mV
		$V_{CE}=5\text{V}, I_C=10\text{mA}$	-	-	770	
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	100	-	-	MHz
Collector Output Capacitance	C_{OB}	$V_{CB}=10\text{V}, f=1\text{MHz}$	-	-	4.5	pF

Typical Characteristics Curves

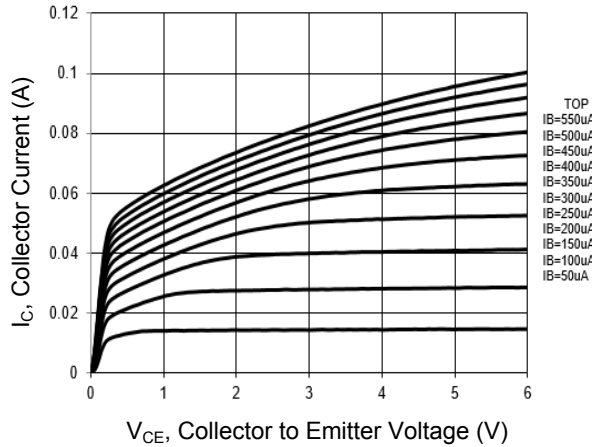


Figure 1. Output Characteristics Curve

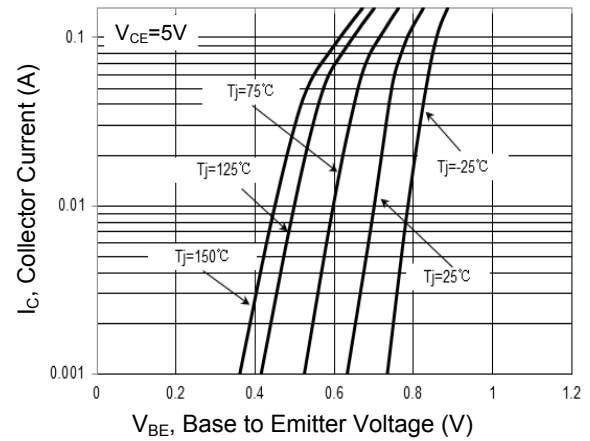


Figure 2. Collector Current vs. Base to Emitter Voltage

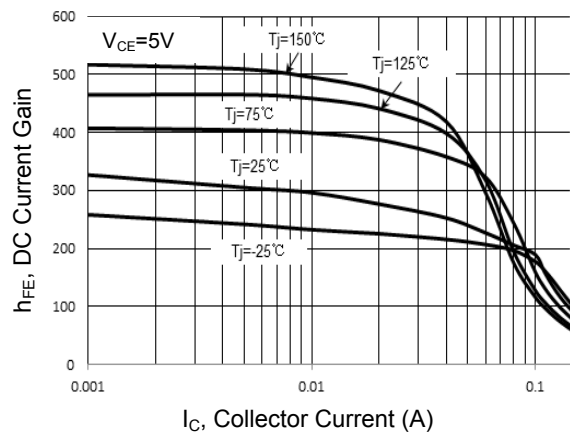


Figure 3. DC Current Gain vs. Collector Current

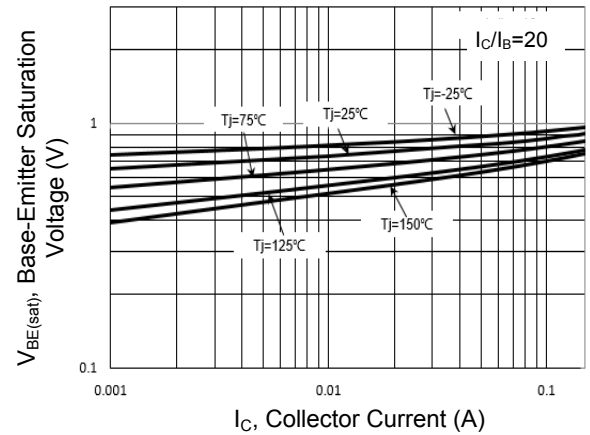


Figure 4. $V_{BE(SAT)}$ vs. Collector Current

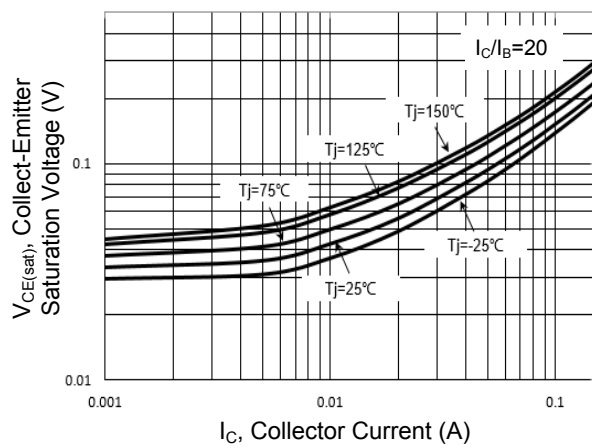


Figure 5. $V_{CE(SAT)}$ vs. Collector Current

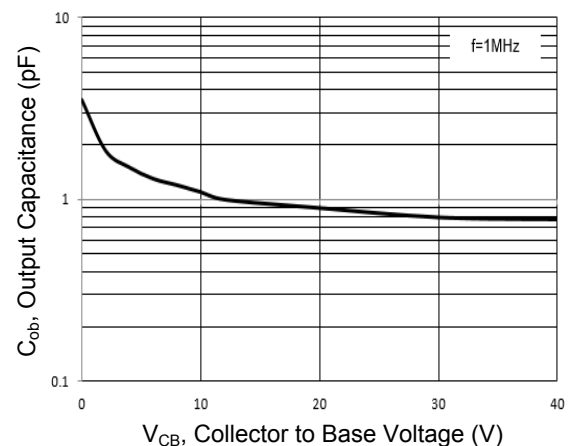


Figure 6. Output Capacitance

Typical Characteristics Curves

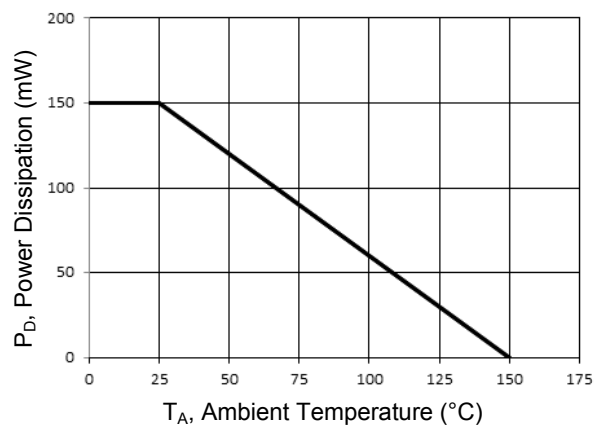
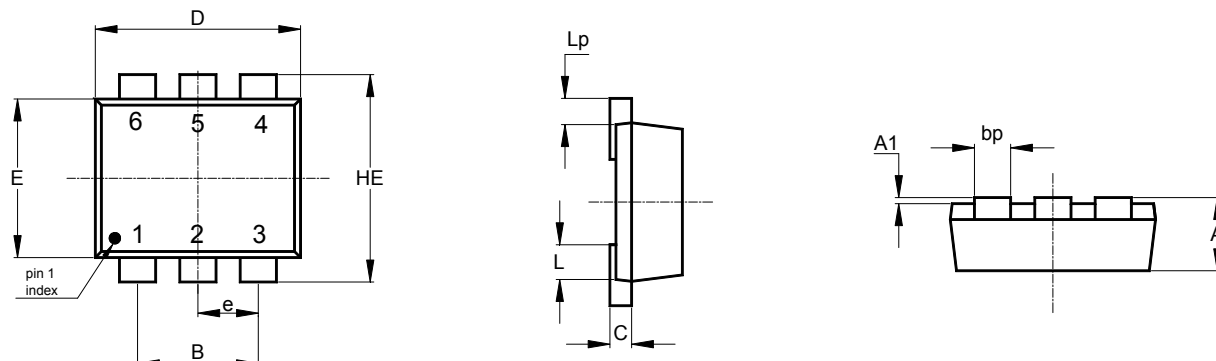


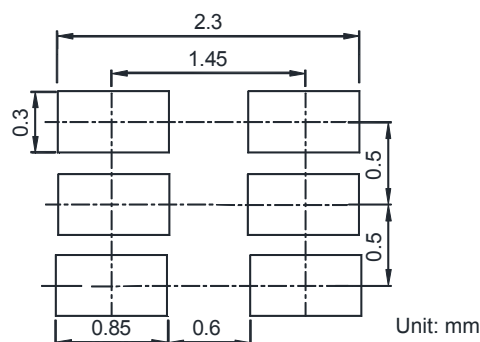
Figure 7. Power Derating Curve

Package Outline Dimensions (SOT-563)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.500	0.600	0.020	0.024
A1	0.000	0.050	0.000	0.002
B	1.000 TYP		0.039 TYP	
C	0.100	0.180	0.004	0.007
D	1.500	1.700	0.059	0.067
E	1.100	1.250	0.043	0.049
HE	1.550	1.700	0.061	0.067
e	0.500 TYP		0.020 TYP	
L	0.020	0.150	0.001	0.006
Lp	0.100	0.300	0.004	0.012
bp	0.150	0.300	0.006	0.012

Recommended Pad Layout



Order Information

Device	Package	Marking	Quantity	HSF Status
GSBC847BV	SOT-563	2E	4,000pcs / Reel	RoHS Compliant