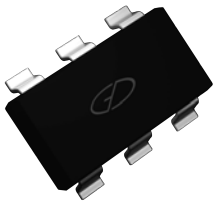
GOOD-ARK SEMICONDUCTOR

GSBC847S-H

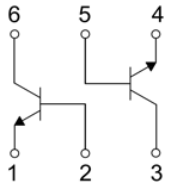
Dual NPN Transistor

Features

- Two transistors in one package
- 200mW: Power dissipation of 200mW
- High stability and high reliability



SOT-363



Schematic Diagram

Mechanical Data

- SOT-363 small outline plastic package
- Epoxy UL: 94V-0
- Mounting position: Any

Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

Parameters	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current-Continuous	I_C	100	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55 to +150	℃
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	625	℃/W

Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	50	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	45	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	6	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB}=30V, I_E=0	-	-	15	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=4V, I_C=0	-	-	15	nA
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=2mA	200	-	450	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=10mA, I_B=0.5mA	-	-	0.25	V
		I_C=100mA, I_B=5mA	-	-	0.65	V
Base-Emitter Voltage	V_{BEON}	V_{CE}=5V, I_C=2mA	0.58	-	0.7	V
		V_{CE}=5V, I_C=10mA	-	-	0.77	V
Output Capacitance	C_{obo}	V_{CB}=10V, F=1MHz, I_E=0	-	2	-	pF
Current Gain-Bandwidth Product	f_T	V_{CE}=5V, I_C=20mA, F=100MHz	-	200	-	MHz

Typical Characteristic Curves

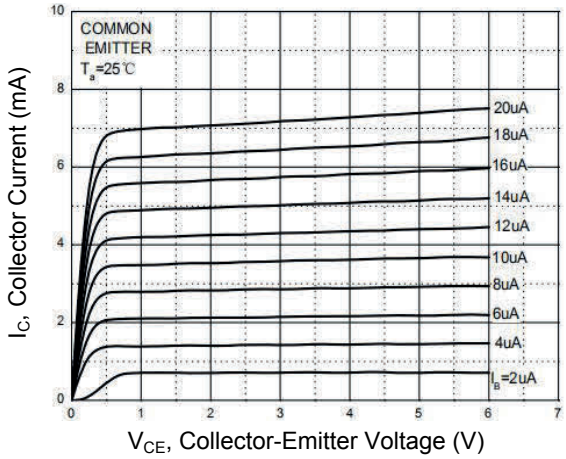


Figure 1. Static Characteristic

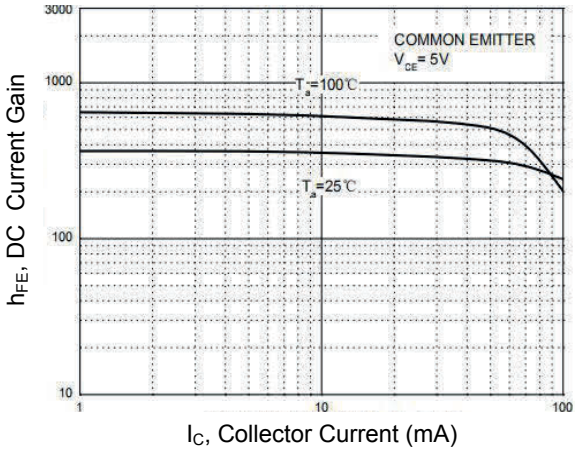


Figure 2. DC Current Gain vs. Collector Current

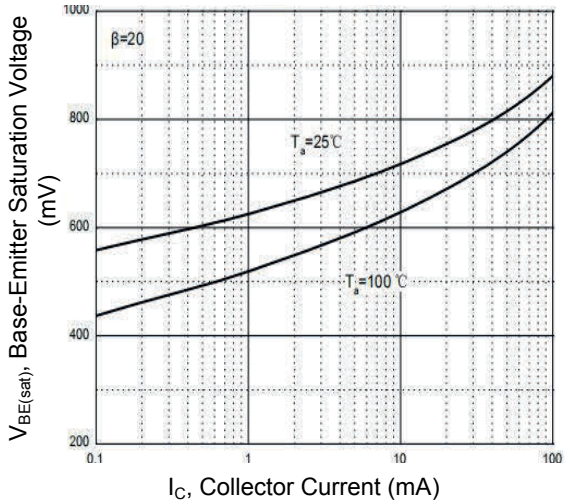


Figure 3. Base-Emitter Saturation Voltage vs. Collector Current

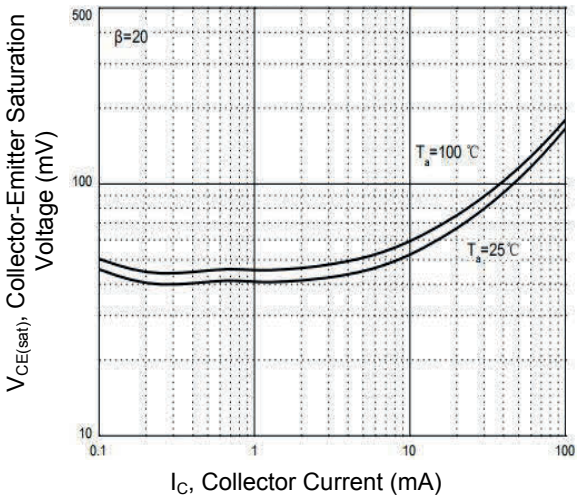


Figure 4. Collector-Emitter Saturation Voltage vs. Collector Current

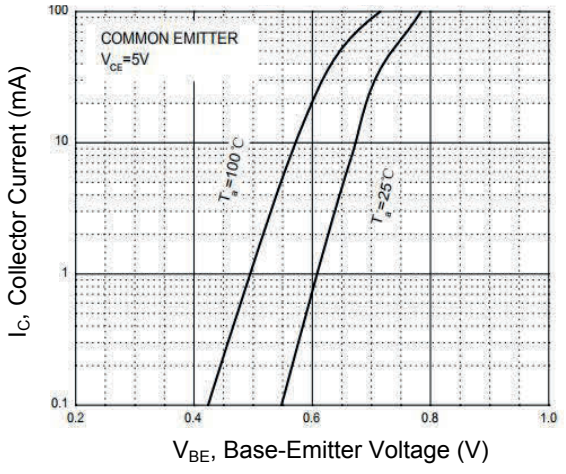


Figure 5. Collector Current vs. Base-Emitter Voltage

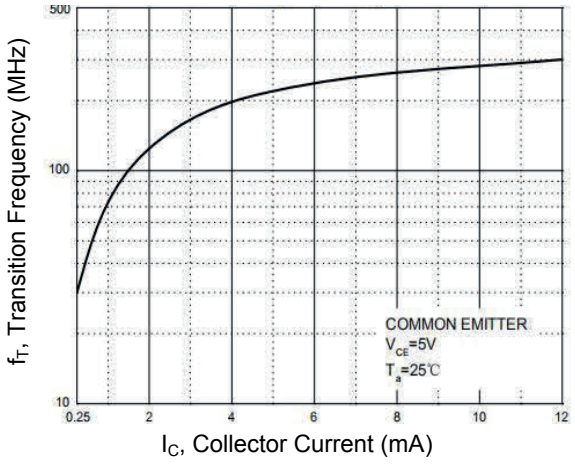


Figure 6. Transition Frequency vs. Collector Current

Typical Characteristic Curves

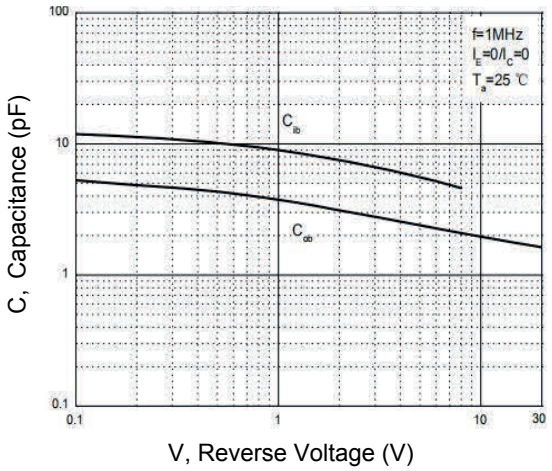


Figure 7. Capacitance Characteristics

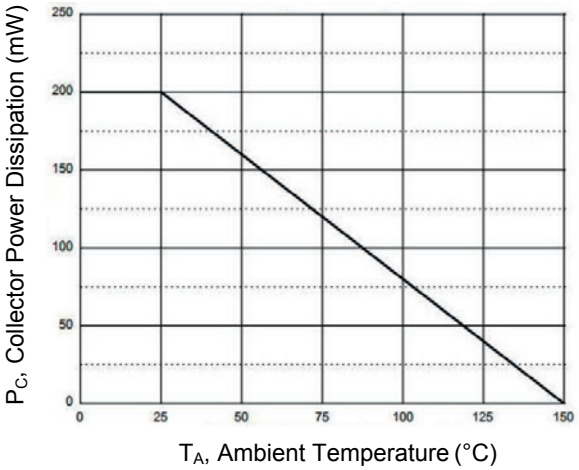
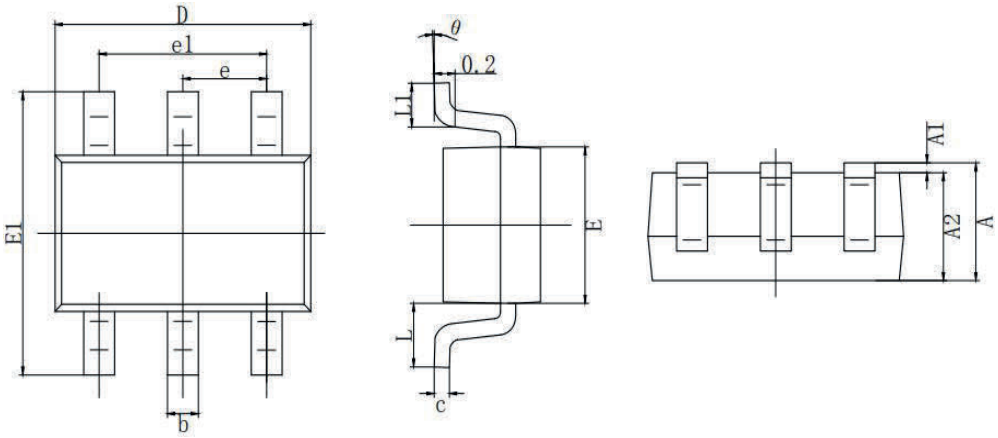


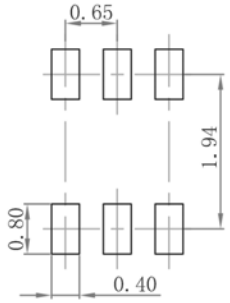
Figure 8. Power Dissipation vs. Ambient Temperature

Package Outline Dimensions (SOT-363)



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	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
8	0°	8°	0°	8°

Recommended Pad Layout



Note:

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

Order Information

Device	Package	Marking	Quantity	HSF Status
GSBC847S-H	SOT-363	1C	3,000pcs / Reel	RoHS Compliant