BC847BS

Dual NPN Small Signal Transistor

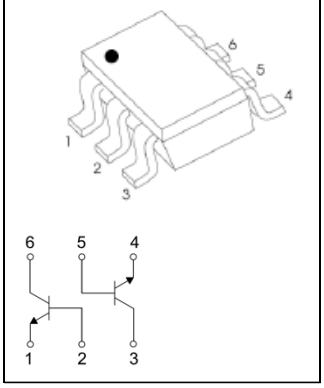
Features

- Epoxy meets UL-94 V-0 flammability rating
- Surface mount package ideally Suited for Automatic Insertion

Mechanical Data

- **Package:** SOT-363
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:**1F

SOT-363



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

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

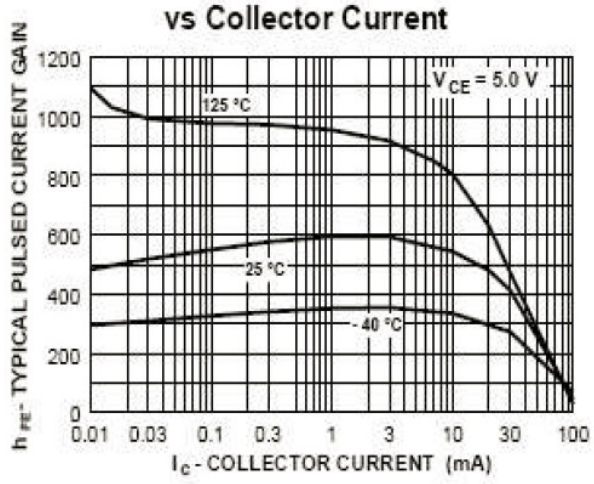
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

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	
DC current gain*	h_{FE}	V_{CE}=5V,I_C=2mA	200		450	
Collector-emitter saturation voltage	$V_{CE(sat)(1)}$	I_C=10mA,I_B=0.5mA			0.25	V
	$V_{CE(sat)(2)}$	I_C=100mA,I_B=5mA			0.65	V
Base-emitter voltage	$V_{BE(1)}$	V_{CE}=5V,I_C=2mA	0.58		0.7	V
	$V_{BE(2)}$	V_{CE}=5V,I_C=10mA			0.77	V
Transition frequency	f_T	V_{CE}=5V,I_C=20mA ,f=100MHz		200		MHz
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0,f=1MHz		2		pF

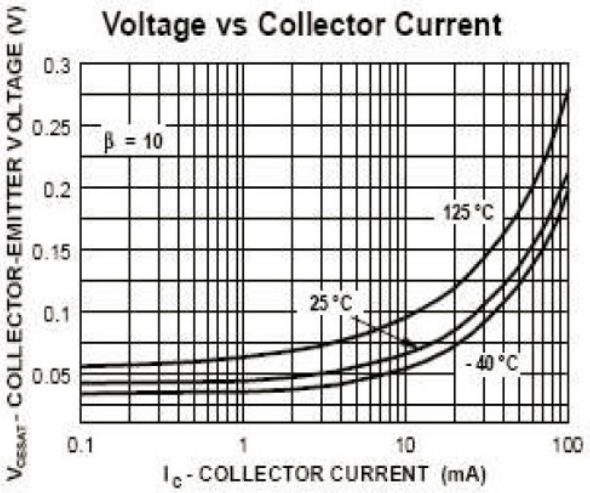
*pulse test: Pulse Width ≤300μs, Duty Cycle≤ 2.0%.

Typical Characteristics

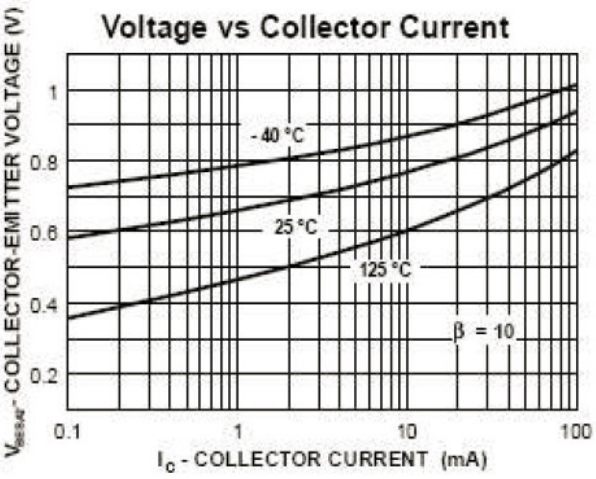
Typical Pulsed Current Gain vs Collector Current



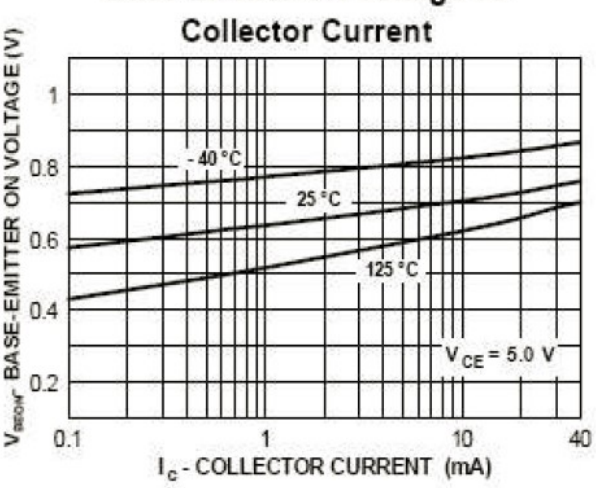
Collector-Emitter Saturation Voltage vs Collector Current



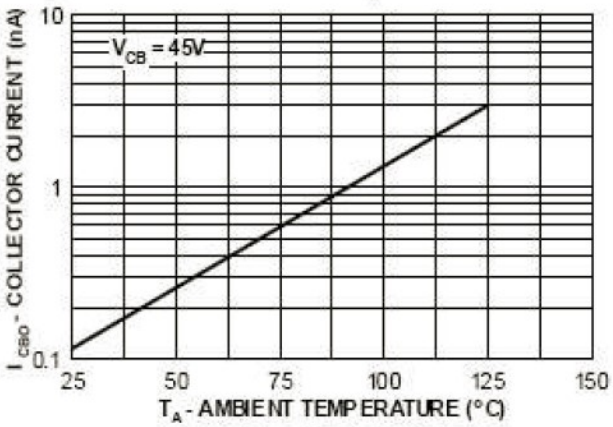
Base-Emitter Saturation Voltage vs Collector Current



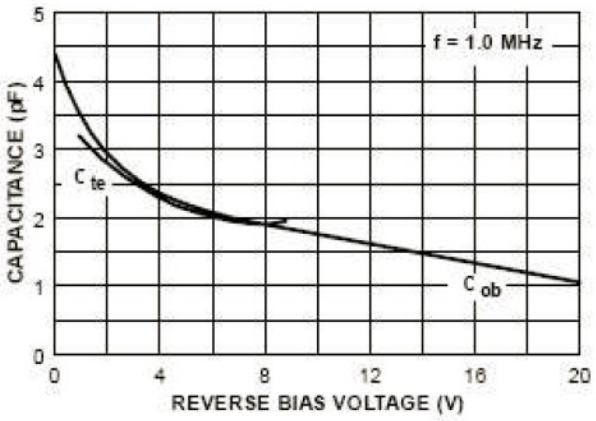
Base-Emitter ON Voltage vs Collector Current



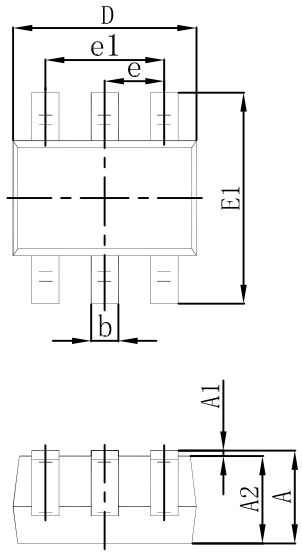
Collector-Cutoff Current vs Ambient Temperature

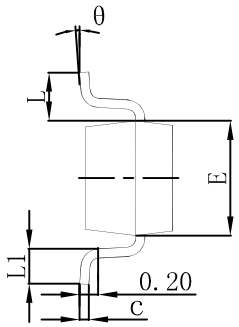


Input and Output Capacitance vs Reverse Bias Voltage



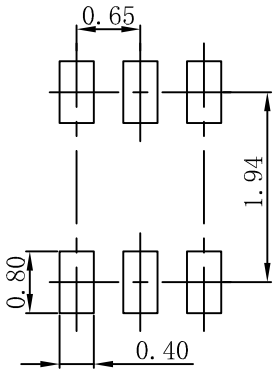
SOT-363 Package Outline Dimensions





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	0.100	0.150	0.004	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
θ	0°	8°	0°	8°

SOT-363 Suggested Pad Layout



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