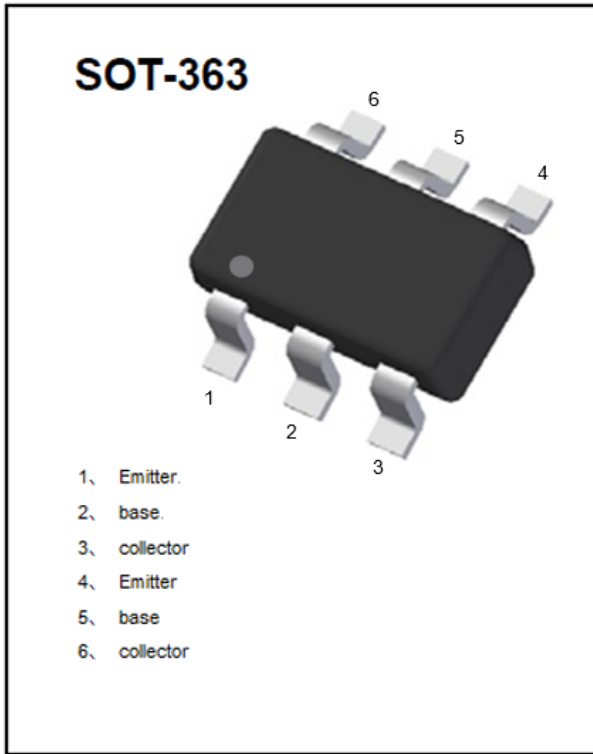


Dual NPN+PNP Small Signal Transistor



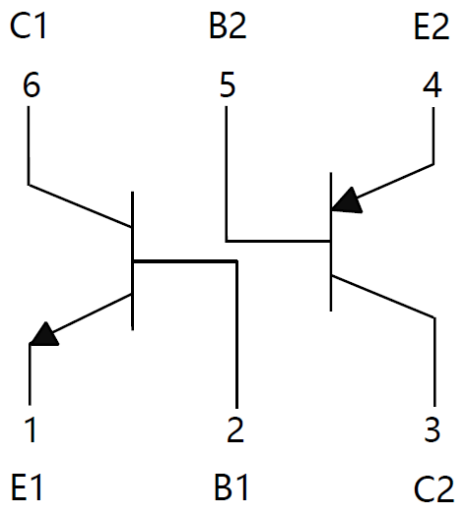
Features

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

Mechanical Data

- **Package:** SOT-363
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 7P

■Equivalent circuit



■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BC847PN	F2	Approximate 0.009g	3000	30000	120000	7" reel



BC847PN

■TR1 NPN Pin1、2、6 Maximum Ratings (Ta=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	V_{CBO}	V	$I_C=10\mu A, I_E=0$	50
Collector-Emitter Voltage	V_{CEO}	V	$I_C=10mA, I_B=0$	45
Emitter-Base Voltage	V_{EBO}	V	$I_E=1\mu A, I_C=0$	6
Collector Current	I_C	mA		100
Collector Power Dissipation	P_C	mW		200
Junction Temperature	T_j	℃		-55 to +150
Storage Temperature	T_{stg}	℃		-55 to +150

■TR1 NPN Pin1、2、6 Electrical Characteristics (Ta=25℃ unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C=10\mu A, I_E=0$	50		
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C=10mA, I_B=0$	45		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=1\mu A, I_C=0$	6		
Collector-Base cut-off current	I_{CBO}	nA	$V_{CB}=30V, I_E=0$			15
Emitter-Base Cut-off current	I_{EBO}	nA	$V_{EB}=5V, I_C=0$			100
DC current gain	h_{FE}		$V_{CE}=5V, I_C=2mA$	200		450
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=10mA, I_B=0.5mA$			0.25
			$I_C=100mA, I_B=5mA$			0.6
Baser-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=10mA, I_B=0.5mA$			1.05
			$I_C=100mA, I_B=5mA$			1.1
Base-emitter Voltage	V_{BE}	V	$V_{CE}=5V, I_C=2mA$			0.7
			$V_{CE}=5V, I_C=10mA$			0.72
Transition frequency	f_T	MHz	$V_{CE}=5V, I_C=10mA, f=100MHz$	100		
Noise figure	NF	dB	$V_{CE}=5V, I_C=0.2mA, f=1kHz, R_g=2K\Omega, \Delta f=200Hz$			10



BC847PN

■TR2 PNP Pin3、4、5 Maximum Ratings (Ta=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	V_{CBO}	V	$I_C = -10\mu A, I_E = 0$	-50
Collector-Emitter Voltage	V_{CEO}	V	$I_C = -10mA, I_B = 0$	-45
Emitter-Base Voltage	V_{EBO}	V	$I_E = -1\mu A, I_C = 0$	-5
Collector Current	I_C	mA		-100
Collector Power Dissipation	P_C	mW		200
Junction Temperature	T_J	℃		-55 to +150
Storage Temperature	T_{stg}	℃		-55 to +150

■TR2 PNP Pin3、4、5 Electrical Characteristics (Ta=25℃ unless otherwise specified)

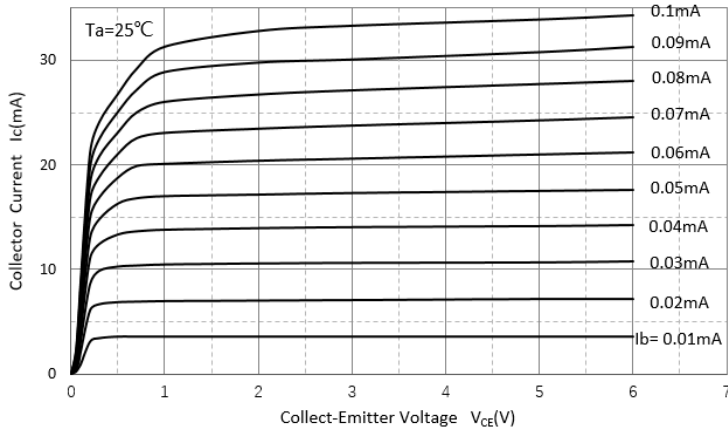
Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C = -10\mu A, I_E = 0$	-50		
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C = -10mA, I_B = 0$	-45		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E = -1\mu A, I_C = 0$	-6		
Collector-Base cut-off current	I_{CBO}	nA	$V_{CB} = -30V, I_E = 0$			-15
Emitter-Base Cut-off current	I_{EBO}	nA	$V_{EB} = -5V, I_C = 0$			-100
DC current gain	h_{FE}		$V_{CE} = -5V, I_C = -2mA$	220		475
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C = -10mA, I_B = -0.5mA$			-0.3
			$I_C = -100mA, I_B = -5mA$			-0.65
Baser-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C = -10mA, I_B = -0.5mA$			-1
			$I_C = -100mA, I_B = -5mA$			-1
Base-emitter Voltage	V_{BE}	V	$V_{CE} = -5V, I_C = -2mA$			-0.75
			$V_{CE} = -5V, I_C = -10mA$			-0.82
Transition frequency	f_T	MHz	$V_{CE} = -5V, I_C = -10mA, f = 100MHz$	100		
Noise figure	NF	dB	$V_{CE} = -5V, I_C = -0.2mA, f = 1kHz, R_g = 2K\Omega, \Delta f = 200Hz$			10



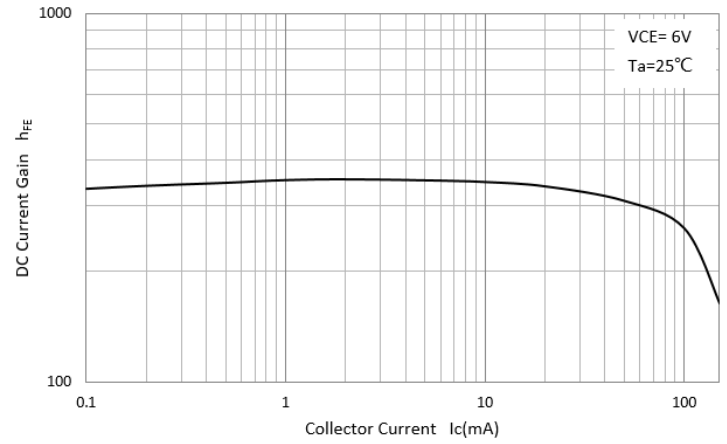
BC847PN

■ TR1 NPN Pin1、2、6 Characteristics (Typical)

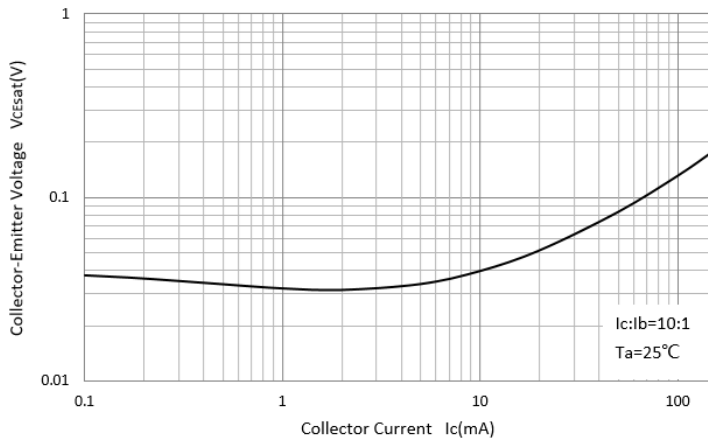
Static Characteristic



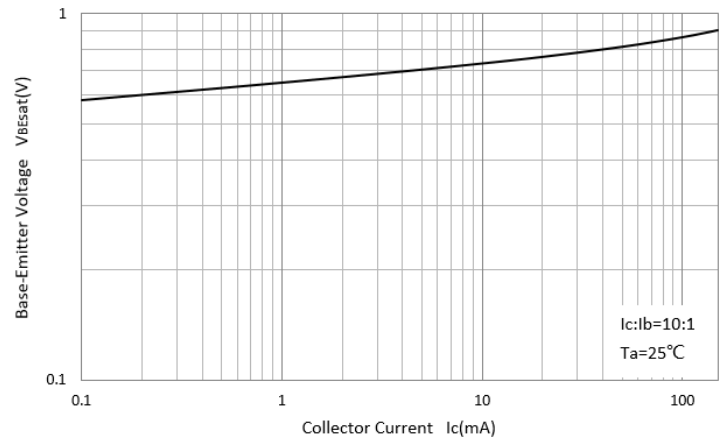
DC Current Gain



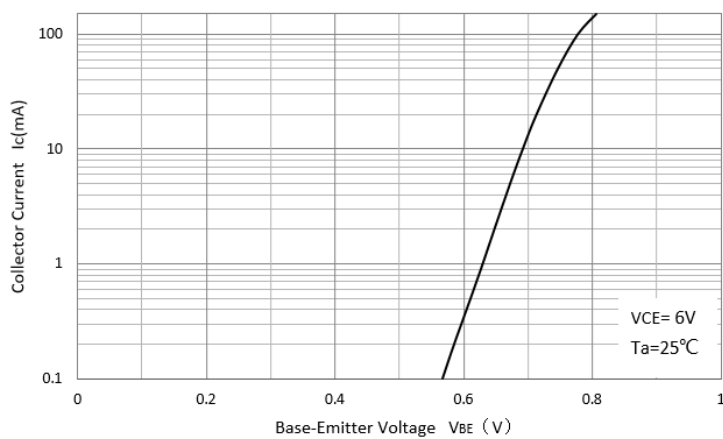
Collector-Emitter Saturation Voltage



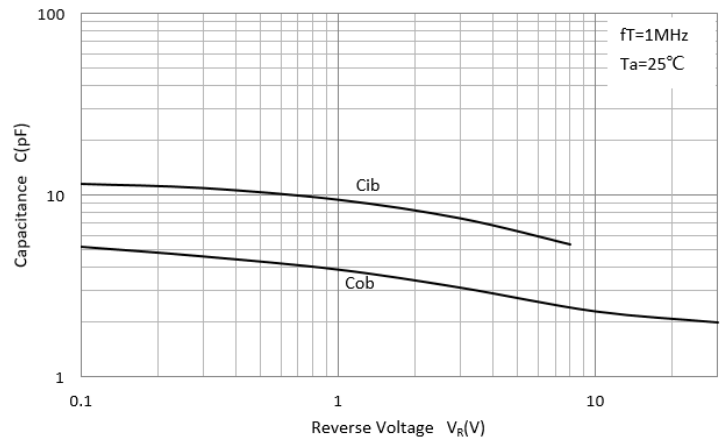
Base-Emitter Saturation Voltage



Base-Emitter On Voltage



$C_{ob}/C_{ib}-V_{CB}/V_{EB}$

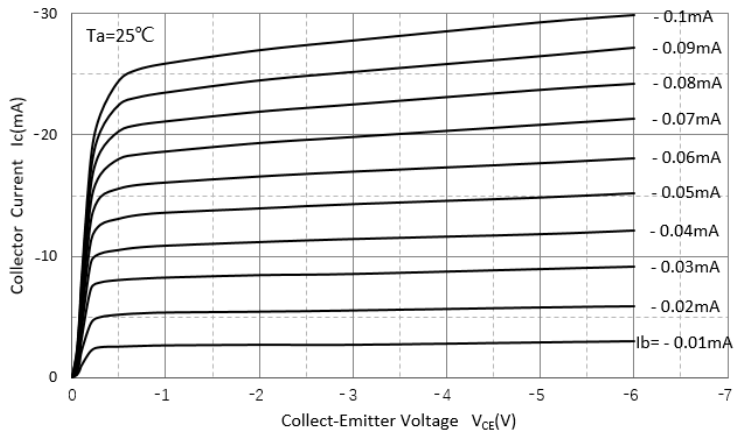




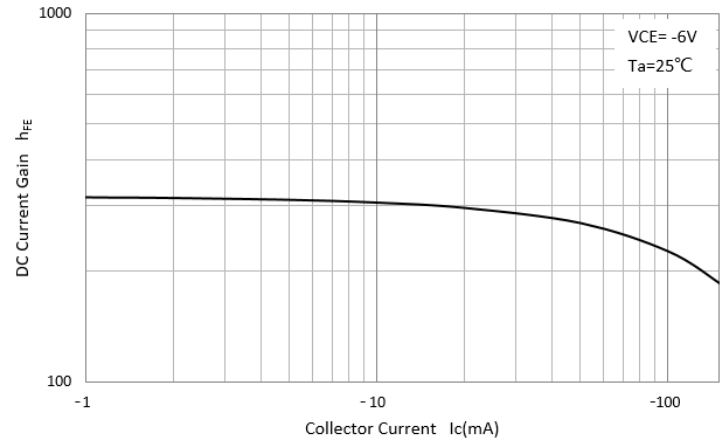
BC847PN

■ TR2 PNP Pin3、4、5 Characteristics (Typical)

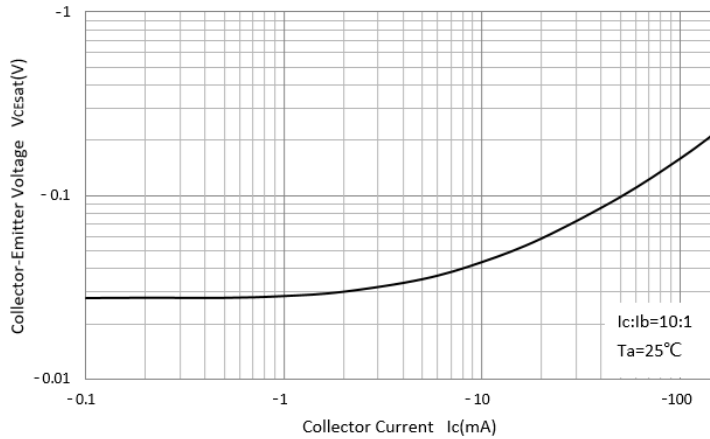
Static Characteristic



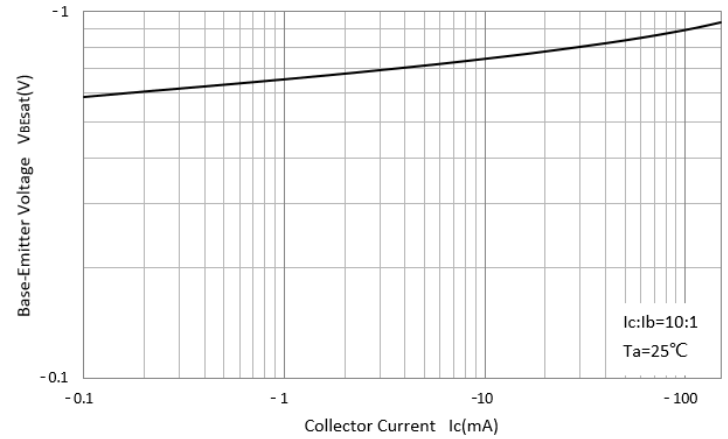
DC Current Gain



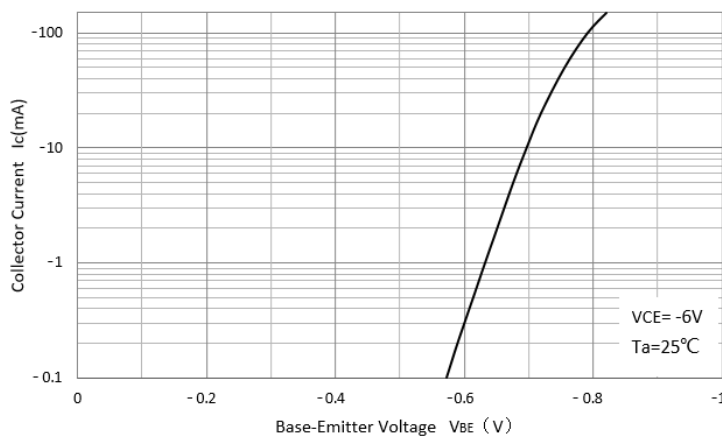
Collector-Emitter Saturation Voltage



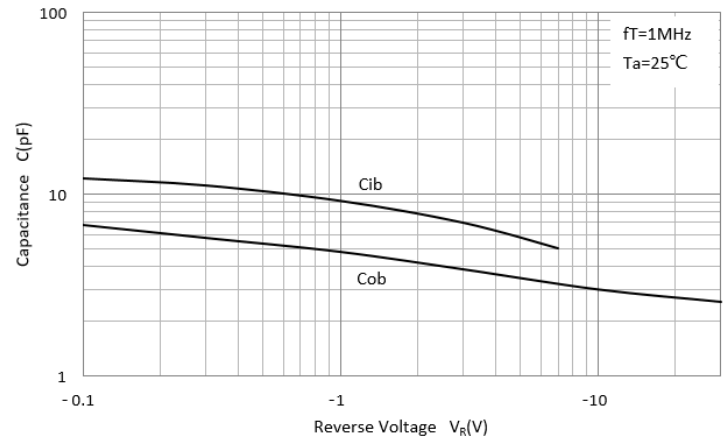
Base-Emitter Saturation Voltage



Base-Emitter On Voltage



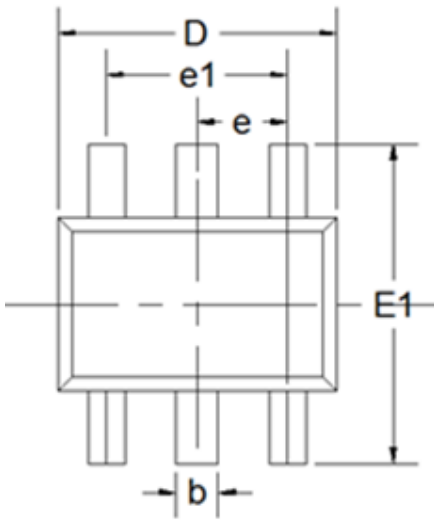
$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



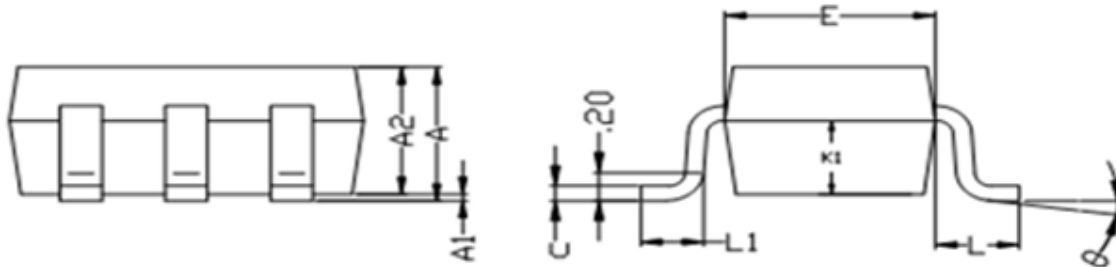


BC847PN

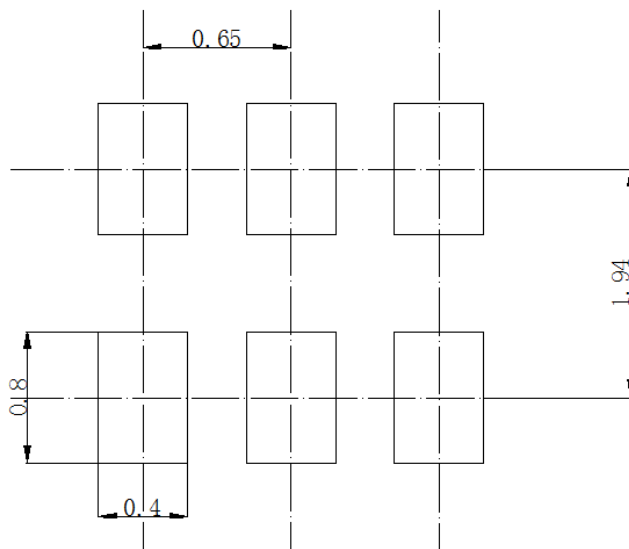
■SOT-363 Package Outline Dimensions



DIM	DIMENSIONS			
	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.035	0.043	0.9	1.1
A1	0	0.004	0	0.1
A2	0.035	0.039	0.9	1
b	0.006	0.014	0.15	0.35
c	0.002	0.01	0.05	0.25
D	0.071	0.087	1.8	2.2
E	0.045	0.053	1.15	1.35
E1	0.085	0.096	2.15	2.45
e	0.026Typ		0.65Typ	
e1	0.047	0.055	1.2	1.4
L	0.021Typ		0.525Typ	
L1	0.01	0.018	0.26	0.46
θ	0°		8°	



■SOT-363 Soldering Footprint



Unit: mm



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