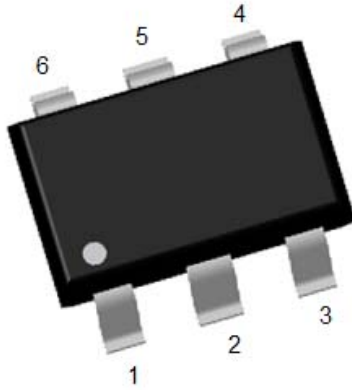


## Dual NPN+PNP Small Signal Transistor

- 1、Emitter
- 2、Base
- 3、Collector
- 4、Emitter
- 5、Base
- 6、Collector



**SOT-363**

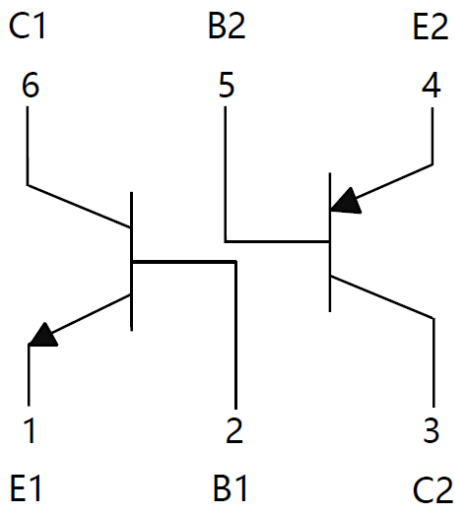
### Features

- Epoxy meets UL-94 V-0 flammability rating
- Surface mount package ideally Suited for Automatic Insertion
- Moisture Sensitivity Level 1
- Part no. with suffix “Q” means AEC-Q101 qualified

### Mechanical Data

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

### Equivalent circuit



### Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BC847PNQ	F2	Approximate 0.007g	3000	30000	120000	7" reel



## BC847PNQ

### ■TR1 NPN Pin1、2、6 Maximum Ratings (Ta=25°C 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	$I_E=10\mu A, I_C=0$	6
Collector Current	$I_C$	mA		100
Collector Power Dissipation	$P_C$	mW		200
Junction Temperature	$T_j$	°C		-55 to +150
Storage Temperature	$T_{stg}$	°C		-55 to +150

### ■TR1 NPN Pin1、2、6 Electrical Characteristics (Ta=25°C 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	$I_E=10\mu A, I_C=0$	6		
Collector-Base cut-off current	$I_{CBO}$	nA	$V_{CB}=30V, I_E=0$			100
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
			$I_C=100mA, I_B=5mA$			0.65
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	$V_{CE}=5V, I_C=2mA$	0.58	0.665	0.7
Transition frequency	$f_T$	MHz	$V_{CE}=5V, I_C=10mA, f=30MHz$	150		



# BC847PNQ

## ■TR2 PNP Pin3、4、5 Maximum Ratings (Ta=25°C 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	$I_E=-10\mu A, I_C=0$	-5
Collector Current	$I_C$	mA		-100
Collector Power Dissipation	$P_C$	mW		200
Junction Temperature	$T_j$	°C		-55 to +150
Storage Temperature	$T_{stg}$	°C		-55 to +150

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

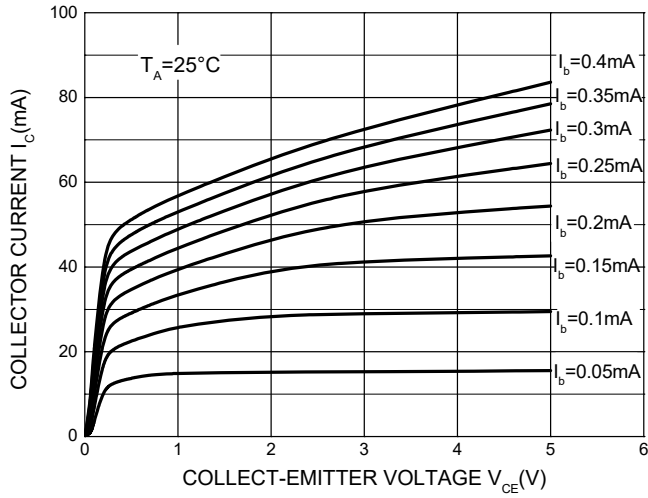
Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	$V_{CBO}$	V	$I_C=-10\mu A, I_E=0$	-50		
Collector-emitter breakdown voltage	$V_{CEO}$	V	$I_C=-10mA, I_B=0$	-45		
Emitter-base breakdown voltage	$V_{EBO}$	V	$I_E=-10\mu A, I_C=0$	-5		
Collector-Base cut-off current	$I_{CBO}$	nA	$V_{CB}=-30V, I_E=0$			-100
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
			$I_C=-100mA, I_B=-5mA$			-1.1
Base-emitter Voltage	$V_{BE}$	V	$V_{CE}=-5V, I_C=-2mA$	-0.6		-0.75
Transition frequency	$f_T$	MHz	$V_{CE}=-5V, I_C=-10mA, f=30MHz$	100		



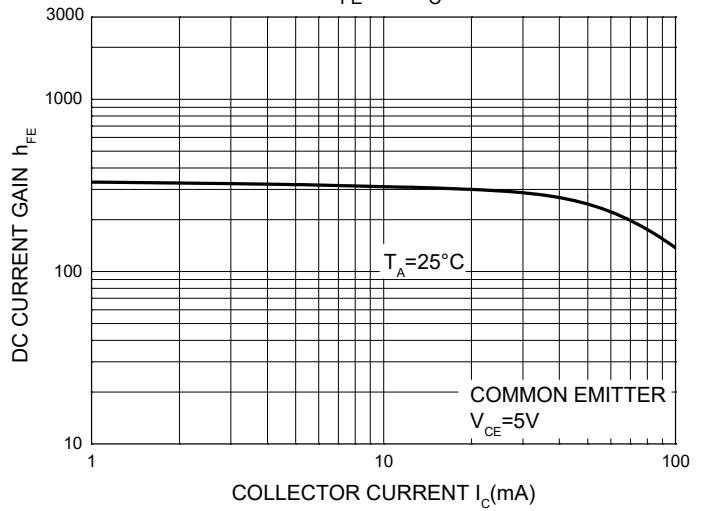
# BC847PNQ

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

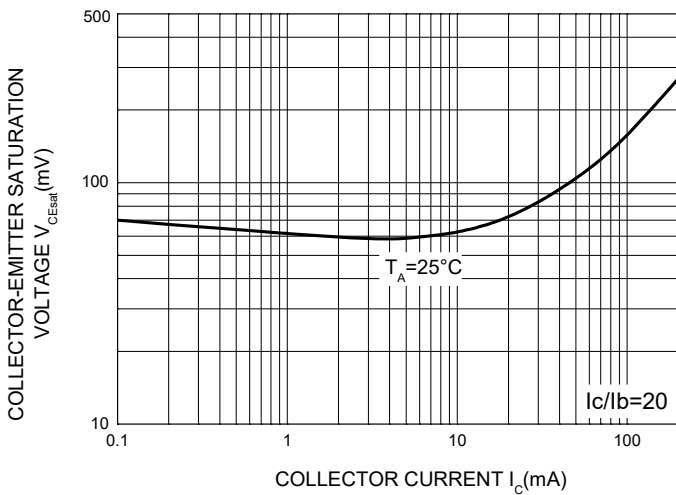
Static Characteristics



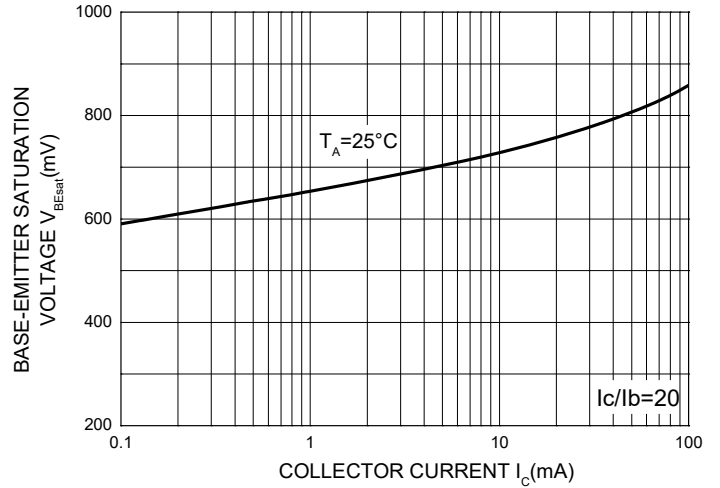
$h_{FE} - I_C$



$V_{CEsat} - I_C$



$V_{BEsat} - I_C$

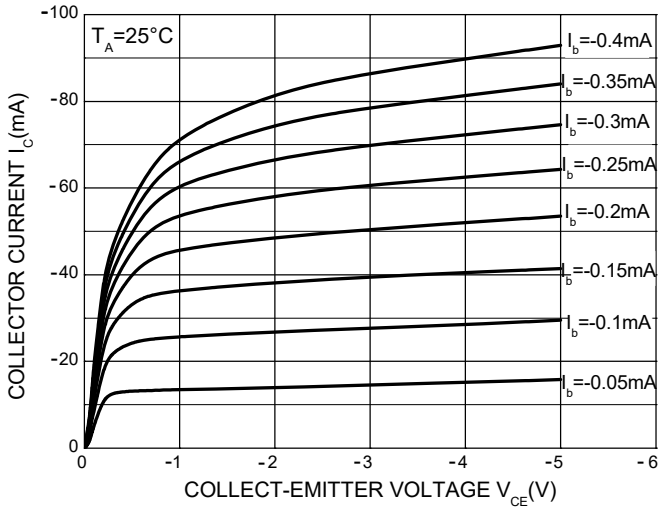




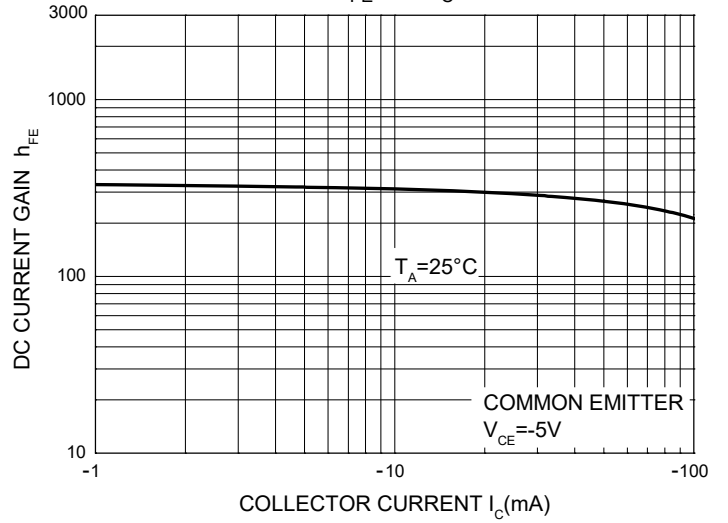
# BC847PNQ

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

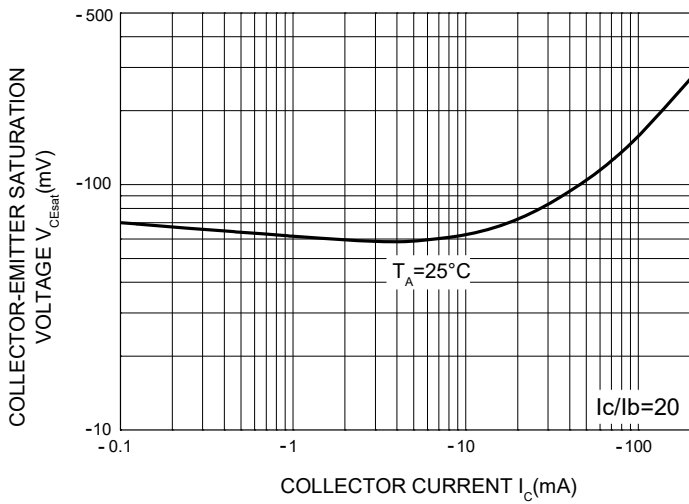
Static Characteristics



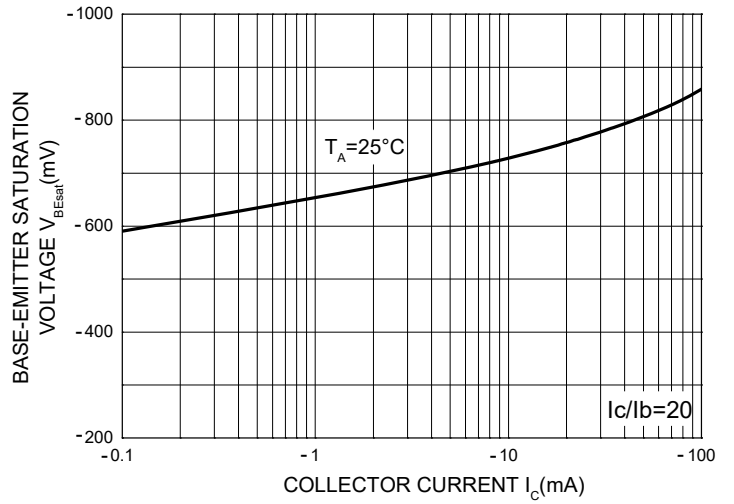
$h_{FE} - I_C$



$V_{CEsat} - I_C$



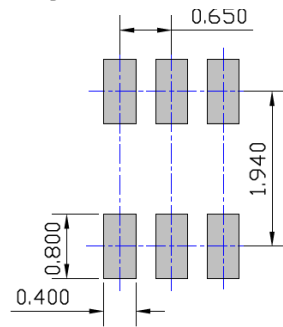
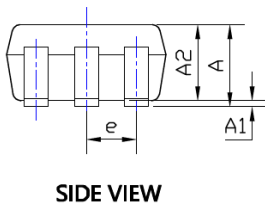
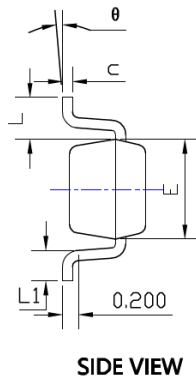
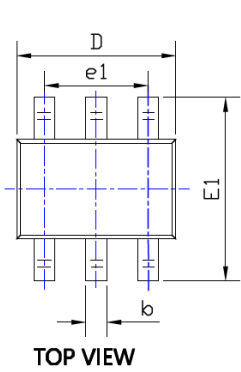
$V_{BEsat} - I_C$





# BC847PNQ

## ■SOT-363 Package Outline Dimensions & Soldering Footprint



UNIT: mm

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.014	0.150	0.350
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
theta	0°	8°	0°	8°

**NOTE:**

- 1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
- 2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
- 3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



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