

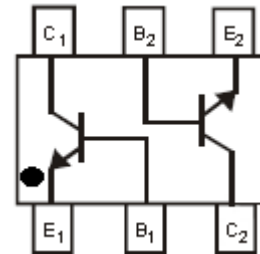


### Features

- Epitaxial die construction
- Complementary PNP Type Available (BC857BV)
- Ultra-small surface mount package

### Mechanical Data

- Case: SOT-563
- Molding compound: UL flammability classification rating 94V-0
- Terminal s: Tin-plated; solderability per MIL-STD-202, Method 208



**SOT-563**

### Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	45	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Current (Continuous)	I <sub>C</sub>	100	mA
Collector Current (Peak)	I <sub>CM</sub>	200	mA

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation <sup>*1</sup>	P <sub>C</sub>	150	mW
Thermal Resistance (Junction-to-Ambient) <sup>*1</sup>	R <sub>θJA</sub>	833	°C/W
Operating junction Temperature	T <sub>J</sub>	-55 ~ +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150	°C



# BC847BV

## Dual Bipolar Transistor(NPN+NPN)



### Electrical Characteristics (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 10μA, I <sub>B</sub> = 0	50	-	-	V
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0	45	-	-	V
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 1μA, I <sub>C</sub> = 0	6	-	-	V
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> = 30V, I <sub>E</sub> = 0	-	-	15	nA
Emitter-base Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0	-	-	100	nA
Collector-emitter Cut-off Current	I <sub>CEO</sub>	V <sub>CE</sub> = 30V, I <sub>B</sub> = 0	-	-	1	mA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	200	-	450	-
Collector-Emitter Saturation Voltage (Note 2)	V <sub>CE(sat)</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0.5mA	-	-	0.25	V
		I <sub>C</sub> = 100mA, I <sub>B</sub> = 5mA	-	-	0.60	V
Base-Emitter Saturation Voltage (Note 2)	V <sub>BE(sat)</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0.5mA	-	0.7	0.90	V
		I <sub>C</sub> = 100mA, I <sub>B</sub> = 5mA	-	0.9	1.10	V
Base-Emitter Voltage (Note 2)	V <sub>BE(ON)</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	0.58	0.66	0.70	V
		V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA	-	-	0.77	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA f = 100MHz	100	-	-	-
Emitter Input Capacitance	C <sub>ib</sub>	V <sub>CB</sub> = 0.5V, I <sub>C</sub> = 0 f = 1MHz	-	13.28	-	pF
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0 f = 1MHz	-	1.52	-	pF

Note 1: Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

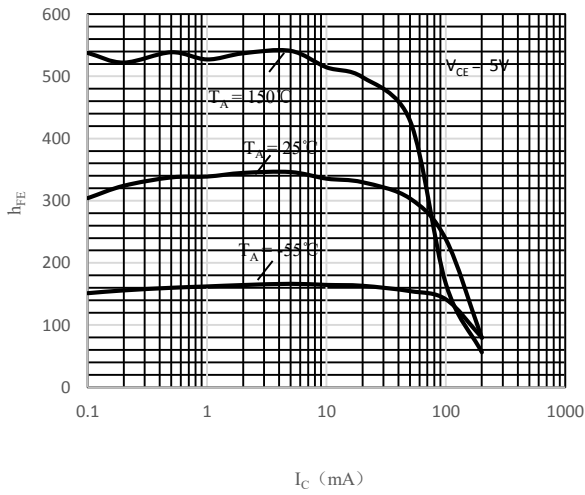


# BC847BV

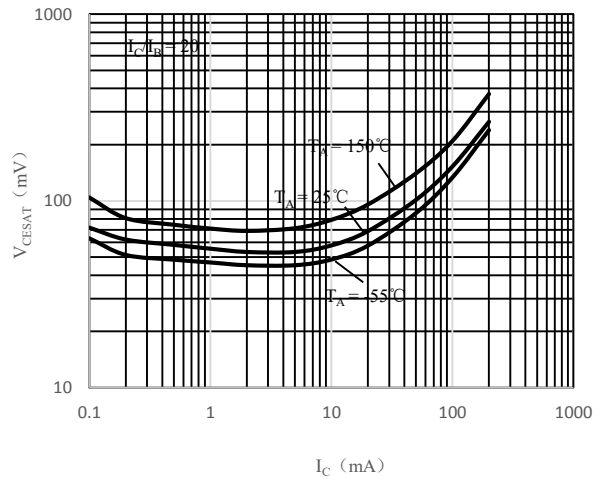
Dual Bipolar Transistor(NPN+NPN)



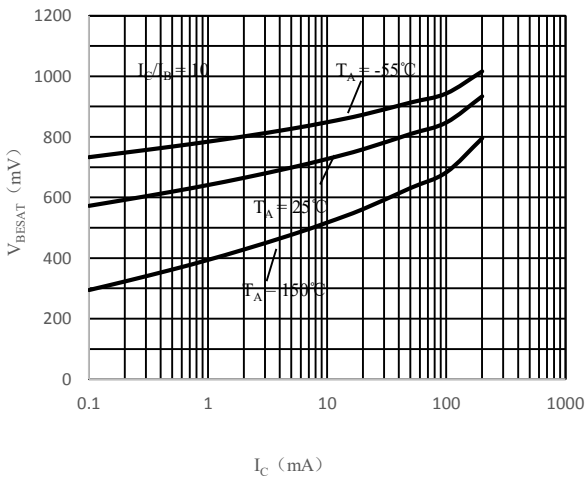
## Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)



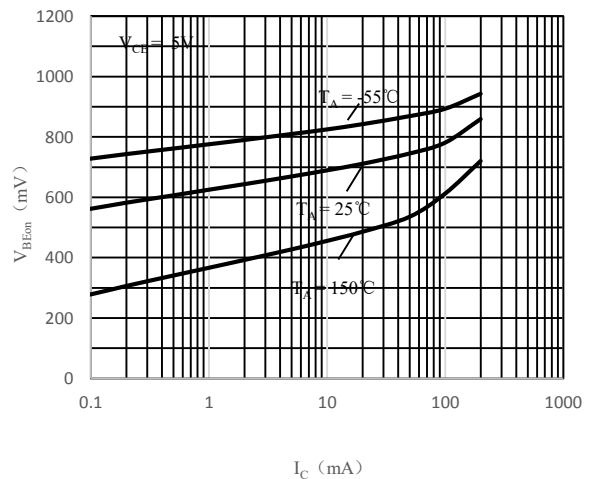
**Fig 1**  $h_{FE}$  vs.  $I_C$



**Fig 2**  $V_{CE(sat)}$  vs.  $I_C$



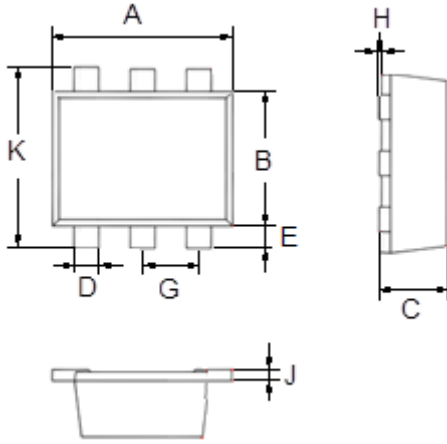
**Fig 3**  $V_{BE(sat)}$  vs.  $I_C$



**Fig 4**  $V_{BE(ON)}$  vs.  $I_C$



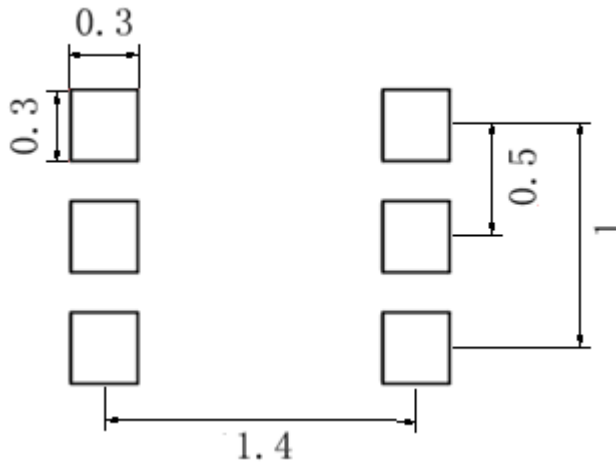
### Package Outline Dimensions (Unit: mm)



SOT-563		
Dimension	Min.	Max.
A	1.500	1.700
B	1.100	1.300
C	0.525	0.600
D	0.170	0.270
E	0.100	0.300
G	0.450	0.550
H	0.000	0.050
J	0.090	0.160
K	1.500	1.700

### Package Outline Dimensions (Unit: mm)

#### SOT-563



### Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BC847BV	SOT-563	3000 pcs / Tape Reel	K4V