PNP Dual Small Signal Surface Mount Transistor

BC857AV BC857BV BC857CV

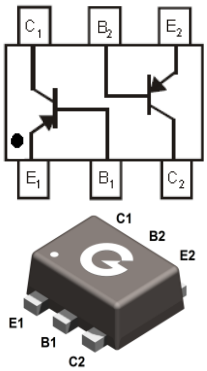
Features

HF

- Epitaxial die construction
- Complementary NPN Type Available (BC847A/B/CV)
- 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

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BC857AV	SOT-563	3000pcs / Tape & Reel	3E
BC857BV	SOT-563	3000pcs / Tape & Reel	K5V
BC857CV	SOT-563	3000pcs / Tape & Reel	3G

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current (Continuous)	I_C	-100	mA
Collector Current (Pulse)	I_{CM}	-200	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (Collector) *1	P_C	150	mW
Thermal Resistance (Junction-to-Ambient) *1	$R_{\theta JA}$	833	°C/W
Power Dissipation *2	P_D	357	mW
Thermal Resistance (Junction-to-Ambient) *2	$R_{\theta JA}$	350	°C/W
Thermal Resistance (Junction-to-Case) *2	$R_{\theta JC}$	200	°C/W
Thermal Resistance (Junction-to-Lead) *2	$R_{\theta JL}$	250	°C/W
Operating junction Temperature	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 10μA, I_B = 0	-50	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA, I_B = 0	-45	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 1μA, I_C = 0	-5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = -30V, I_E = 0	-	-	-15	nA
DC Current Gain	h_{FE}	V_{CE} = -5V, I_C = -2mA				
		BC857AV	125	-	250	-
		BC857BV	220	-	475	-
		BC857CV	420	-	800	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -10mA, I_B = -0.5mA	-	-	-0.1	V
		I_C = -100mA, I_B = -5mA	-	-	-0.4	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = -10mA, I_B = -0.5mA	-	-0.7	-	V
		I_C = -100mA, I_B = -5mA	-	-0.9	-	V
Base-Emitter Voltage	$V_{BE(ON)}$	V_{CE} = -5V, I_C= -2mA	-0.6	-	-0.75	V
		V_{CE} = -5V, I_C= -10mA	-	-	-0.82	V
Transition Frequency	f_T	V_{CE} = -5V, I_C= -10mA f = 100MHz	100	-	-	-
Collector-BASE Capacitance	C_{CB}	V_{CB} = -10V, I_E = 0 f = 1MHz	-	-	4.5	pF

Notes:

1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch
2. The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

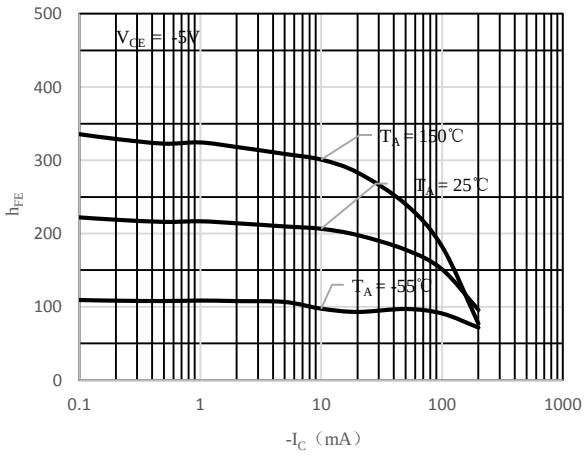


Fig 1 h_{FE} vs. I_C(BC857AV)

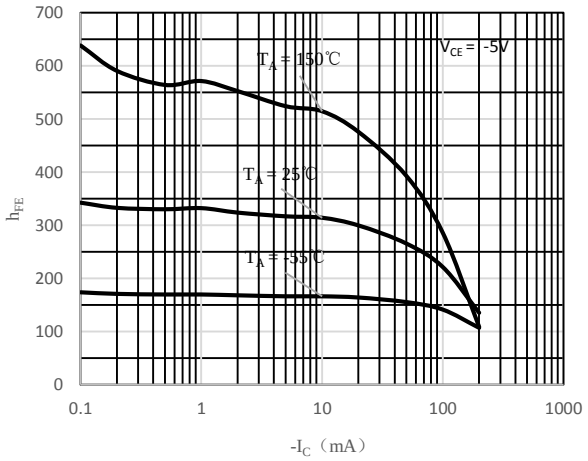


Fig 2 h_{FE} vs. I_C(BC857BV)

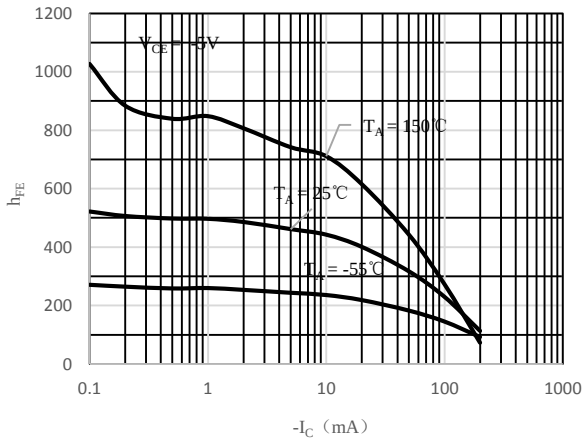


Fig 3 h_{FE} vs. I_C(BC857CV)

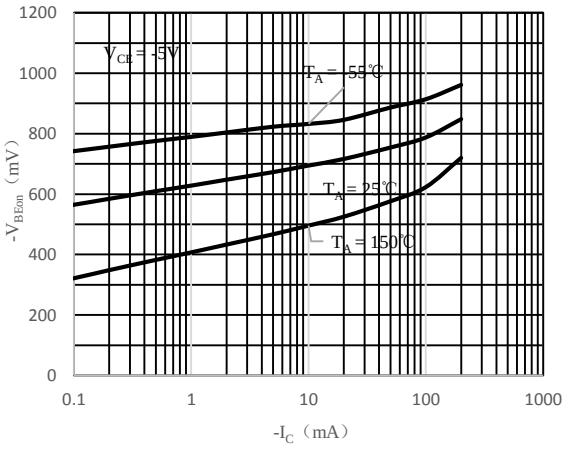


Fig 4 $V_{BE(ON)}$ vs. I_C

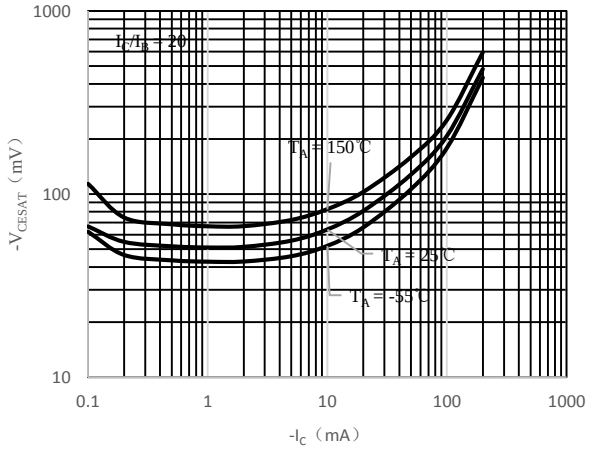


Fig 5 $V_{CE(sat)}$ vs. I_C

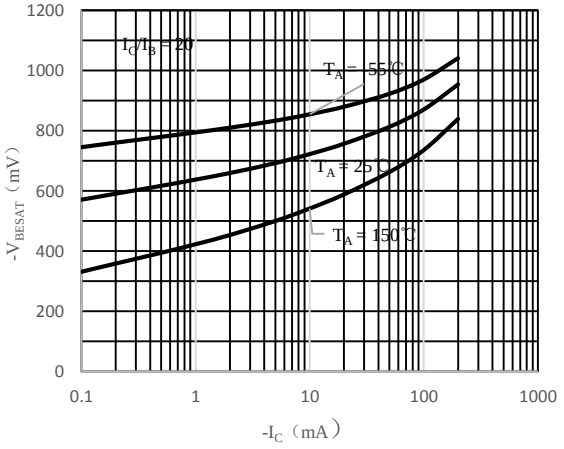
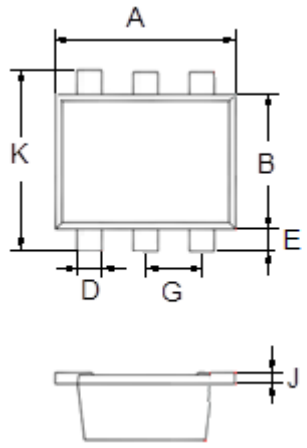


Fig 6 $V_{BE(sat)}$ vs. I_C

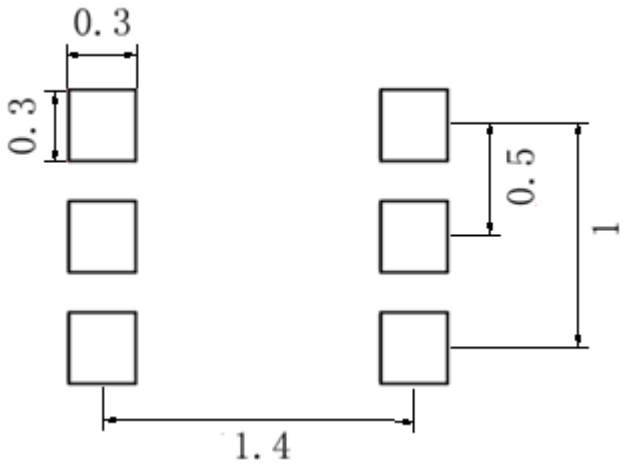
Package Outline Dimensions (Unit: mm)



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



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