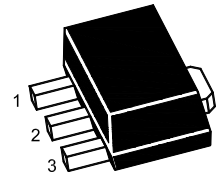


BC869U

PNP Silicon Epitaxial Planar Power Transistor

The transistor is subdivided into two groups, -16 and -25, according to its DC current gain



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

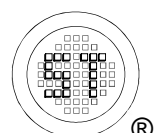
Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	32	V
Collector Emitter Voltage	$-V_{CEO}$	20	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	1	A
Peak Collector Current	$-I_{CM}$	2	A
Peak Base Current	$-I_{BM}$	200	mA
Total Power Dissipation	P_{tot}	0.5 ¹⁾ 1.2 ²⁾	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	250 ¹⁾ 104 ²⁾	$^\circ\text{C/W}$

¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

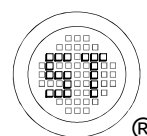
²⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.



BC869U

Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE} = 10\text{ V}$, $-I_C = 5\text{ mA}$ at $-V_{CE} = 1\text{ V}$, $-I_C = 1\text{ A}$ at $-V_{CE} = 1\text{ V}$, $-I_C = 500\text{ mA}$	h_{FE} h_{FE} h_{FE} h_{FE}	50 60 100 160	- - - -	- - 250 375	- - - -
Collector Base Cutoff Current at $-V_{CB} = 25\text{ V}$	$-I_{CBO}$	-	-	100	nA
Emitter Base Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	-	100	nA
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	32	-	-	V
Collector Emitter Breakdown Voltage at $-I_C = 2\text{ mA}$	$-V_{(BR)CEO}$	20	-	-	V
Emitter Base Breakdown Voltage at $-I_E = 100\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage at $-I_C = 1\text{ A}$, $-I_B = 100\text{ mA}$	$-V_{CE(sat)}$	-	-	500	mV
Base Emitter On Voltage at $-V_{CE} = 10\text{ V}$, $-I_C = 5\text{ mA}$ at $-V_{CE} = 1\text{ V}$, $-I_C = 1\text{ A}$	$-V_{BE(on)}$	- -	- -	0.7 1	V
Transition Frequency at $-V_{CE} = 5\text{ V}$, $-I_C = 50\text{ mA}$, $f = 100\text{ MHz}$	f_T	40	-	-	MHz
Collector Output Capacitance at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	12	-	pF



Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

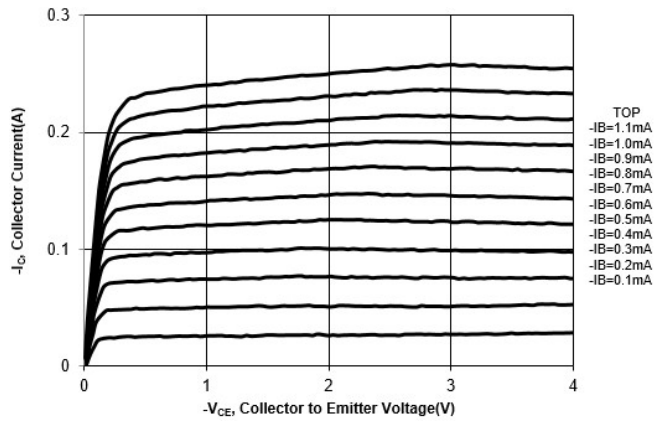


Fig. 2 Collector Current vs. Base to Emitter Voltage

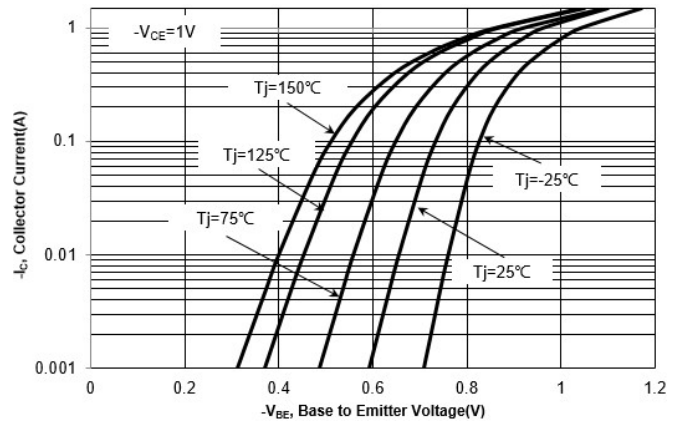


Fig. 3 DC Current Gain vs. Collector Current

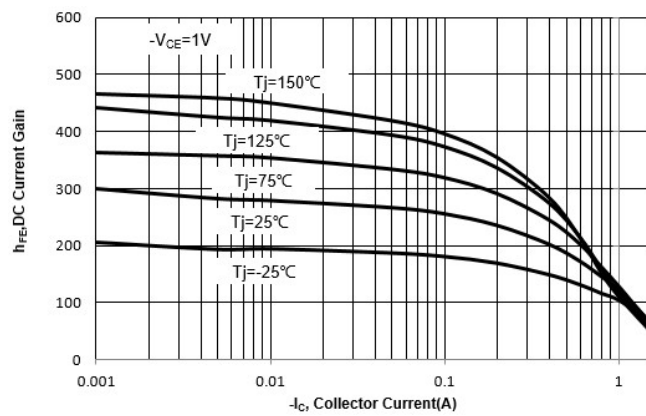
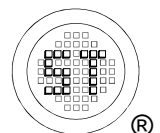
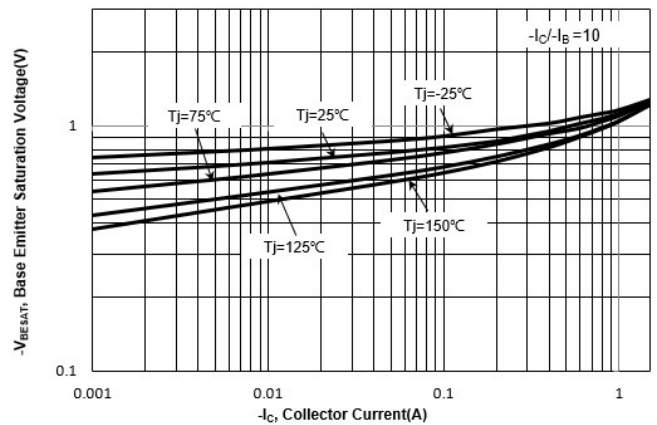


Fig. 4 V_{BESAT} vs. Collector Current



Electrical Characteristics Curves

Fig. 5 V_{CESAT} vs. Collector Current

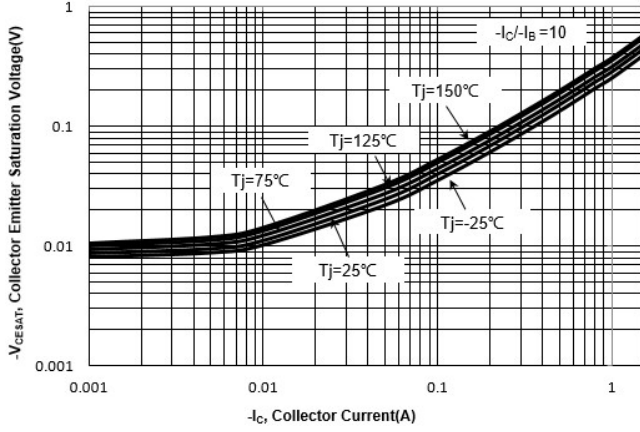


Fig. 6 Output Capacitance

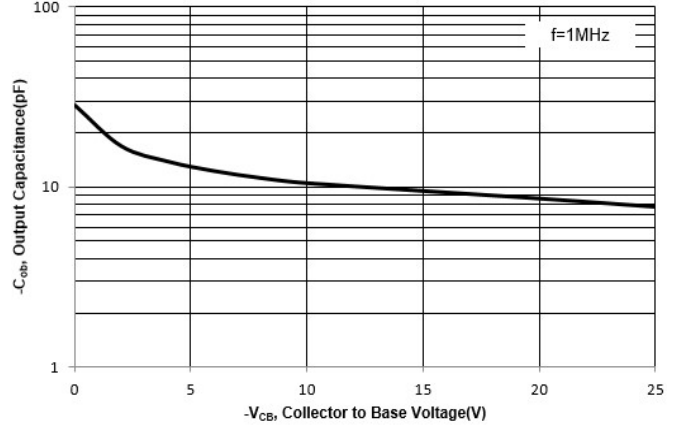


Fig. 7 Power Derating Curve

