

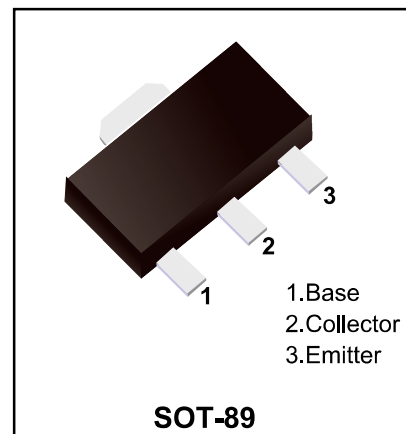
NPN Plastic-Encapsulate Transistors

Applications

- ◆General purpose switching and amplification
- ◆Power applications such as audio output stages

Features

- ◆High current (max. 1A)
- ◆Low voltage (max. 20V).
- ◆Complement the BC869



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	32	V
Collector-Emitter Voltage	BV_{CEO}	20	V
Emitter-Base Voltage	BV_{EBO}	5	V
Collector Current (DC)	I_C	1	A
Collector Current (Pulse)	I_{CM}	2	A
Base Current (Pulse)	I_{BM}	0.2	A
Total Power Dissipation (Note 1)	P_{tot}	1.35	W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55~150	°C
Ambient Temperature	T_{amb}	-55~150	°C

Thermal characteristics

Parameter	Symbol	Conditions	Value	Unit
Thermal resistance from junction to ambient	$R_{\theta J-A}$	Note 1	93	°C/W
Thermal resistance from junction to soldering point	$R_{\theta J-S}$		13	°C/W

Note 1

Device mounted on a printed-circuit board, single sided copper, tinplated, mounting pad for collector 6 cm²

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	32			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	20			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu A, I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 25V, I_E = 0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			100	nA
DC current gain	h_{FE}	$V_{CE} = 10V, I_B = 5mA$ $V_{CE} = 1V, I_B = 0.5A$ $V_{CE} = 1V, I_B = 1A$	50 85 60		375	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1A, I_B = 0.1A$			0.5	V
Base-emitter voltage	V_{BE}	$V_{CE} = 10V, I_B = 5mA$		0.62		V
Transition frequency	f_T	$V_{CE} = 5V, I_E = 10mA$	40			MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		15		pF

* Pulse Test: $P_W = 300\mu s$, duty Cycle=2% Pulsed

 h_{FE} Classification

Classification	BC868	BC868-10	BC868-16	BC868-25
Range	85~375	85~160	100~250	160~375
Marking	CAC	CBC	CCC	CDC

Typical Characteristics

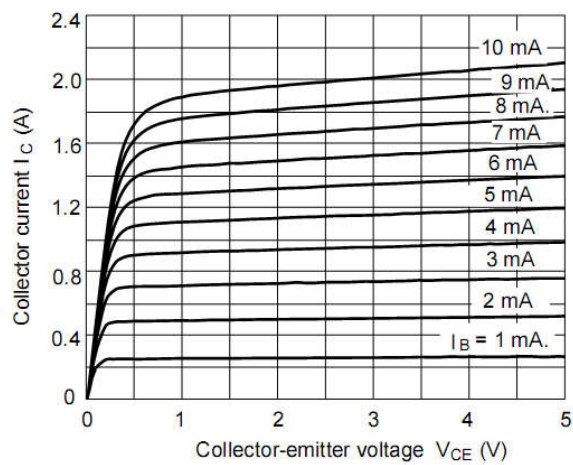


Figure 1. Static Characteristic

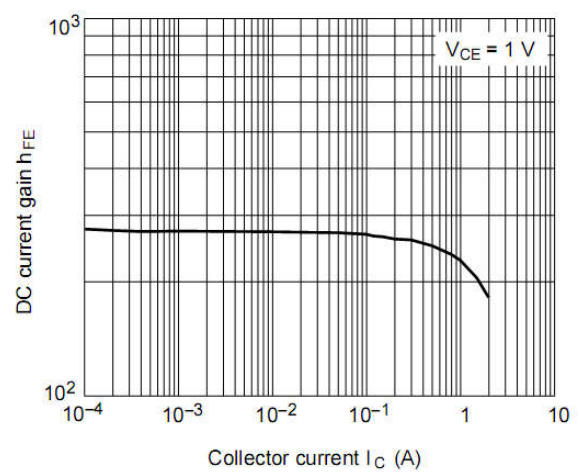


Figure 2. DC current Gain

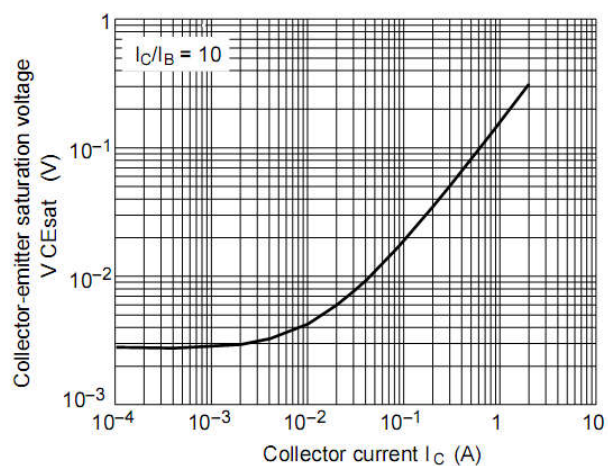


Figure 3. Collector-Emitter Saturation Voltage

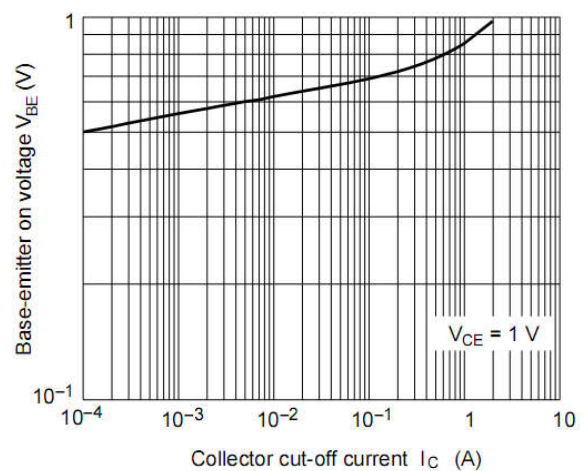


Figure 4. Base-Emitter on Voltage

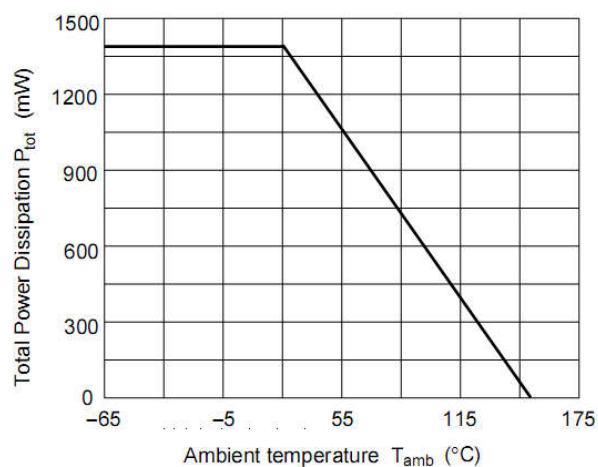


Figure 5. Power Derating

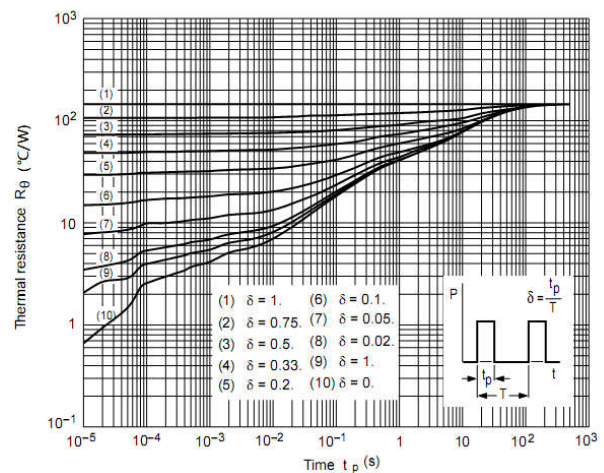


Figure 6. Transient Thermal Impedance

Ordering information

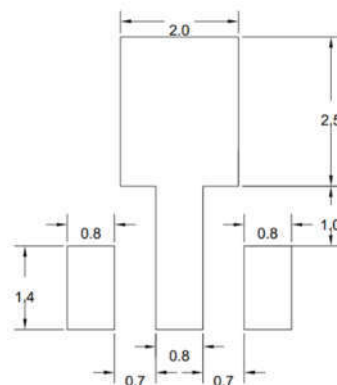
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



UNIT:MM

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