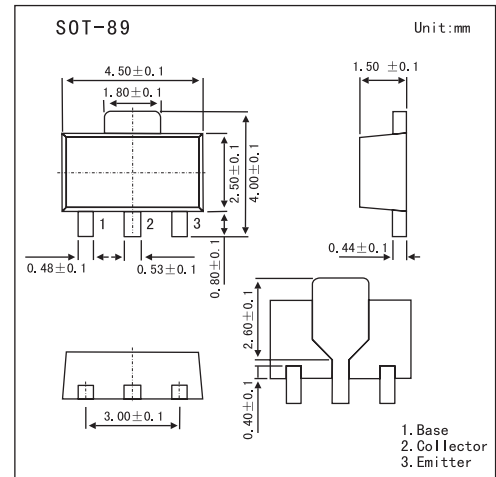


## NPN Medium Power Transistor

## BC868

## ■ Features

- High current
- Two current gain selections
- 1.2 W total power dissipation.

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

Parameter	Symbol	Rating	Unit	
Collector-base voltage (open emitter)	$V_{CB0}$	32	V	
Collector-emitter voltage (open base)	$V_{CE0}$	20	V	
Emitter-base voltage (open collector)	$V_{EB0}$	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	$P_{tot}$	*1 and *2	0.5	W
		*1 and *3	0.85	W
		*1 and *4	1.2	W
Storage temperature	$T_{stg}$	-65 to +150	$^\circ\text{C}$	
Junction temperature	$T_J$	150	$^\circ\text{C}$	
ambient temperature	$T_{amb}$	-65 to +150	$^\circ\text{C}$	
Thermal resistance from junction to ambient	$R_{th(j-a)}$	*1 and *2	250	K/W
		*1 and *3	147	K/W
		*1 and *4	104	K/W
Thermal resistance from junction to solder point	$R_{th(j-s)}$	20	K/W	

\*1.Refer to SOT89 standard mounting conditions.

\*2.Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated footprint.

\*3.Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 1  $\text{cm}^2$ .

\*4.Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6  $\text{cm}^2$ .

**BC868**■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 25 V, I <sub>E</sub> = 0			100	nA	
		V <sub>CB</sub> = 25 V, I <sub>E</sub> = 0; T <sub>j</sub> = 25°C			10	μA	
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0			100	nA	
DC current gain	BC868	h <sub>FE</sub>	I <sub>C</sub> = 5 mA; V <sub>CE</sub> = 10 V	50			
			I <sub>C</sub> = 500 mA; V <sub>CE</sub> = 1 V	85		375	
			I <sub>C</sub> = 1 A; V <sub>CE</sub> = 1 V	60			
	BC868-25	h <sub>FE</sub>	I <sub>C</sub> = 500 mA; V <sub>CE</sub> = 1 V	160		375	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 1 A; I <sub>B</sub> = 100 mA			500	mV	
Base to emitter voltage	V <sub>BE</sub>	I <sub>C</sub> = 5 mA; V <sub>CE</sub> = 10 V			700	mV	
		I <sub>C</sub> = 1 A; V <sub>CE</sub> = 1 V			1	V	
Collector capacitance	C <sub>c</sub>	I <sub>E</sub> = I <sub>E</sub> = 0; V <sub>CB</sub> = 10 V; f = 1 MHz		22		pF	
Transition frequency	f <sub>T</sub>	I <sub>C</sub> = 50 mA; V <sub>CE</sub> = 5 V; f = 100 MHz	40	170		MHz	

■ h<sub>FE</sub> Classification

TYPE	BC868	BC868-25
Marking	CAC	CDC