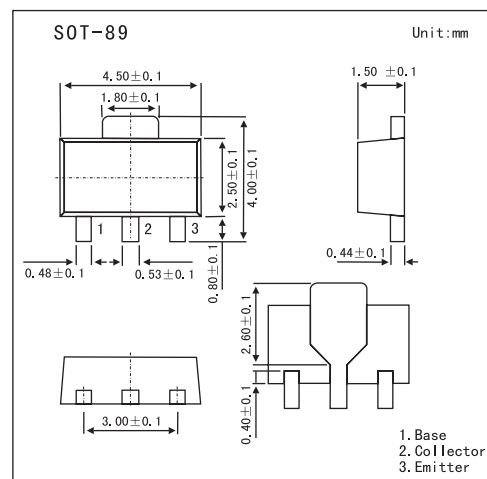


## NPN Medium Power Transistor

## 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
		*1 and *3	0.85
		*1 and *4	1.2
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
		*1 and *3	147
		*1 and *4	104
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	$I_{CBO}$	$V_{CB} = 25\text{ V}, I_E = 0$			100	nA
		$V_{CB} = 25\text{ V}, I_E = 0; T_j = 25^\circ\text{C}$			10	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 5\text{ V}, I_C = 0$			100	nA
DC current gain	BC868	$I_C = 5\text{ mA}; V_{CE} = 10\text{ V}$	50			
		$I_C = 500\text{ mA}; V_{CE} = 1\text{ V}$	85		375	
		$I_C = 1\text{ A}; V_{CE} = 1\text{ V}$	60			
	BC868-25	$I_C = 500\text{ mA}; V_{CE} = 1\text{ V}$	160		375	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1\text{ A}; I_B = 100\text{ mA}$			500	mV
Base to emitter voltage	$V_{BE}$	$I_C = 5\text{ mA}; V_{CE} = 10\text{ V}$			700	mV
		$I_C = 1\text{ A}; V_{CE} = 1\text{ V}$			1	V
Collector capacitance	$C_c$	$I_E = I_C = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$		22		pF
Transition frequency	$f_T$	$I_C = 50\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	40	170		MHz

## ■ hFE Classification

TYPE	BC868	BC868-25
Marking	CAC	CDC