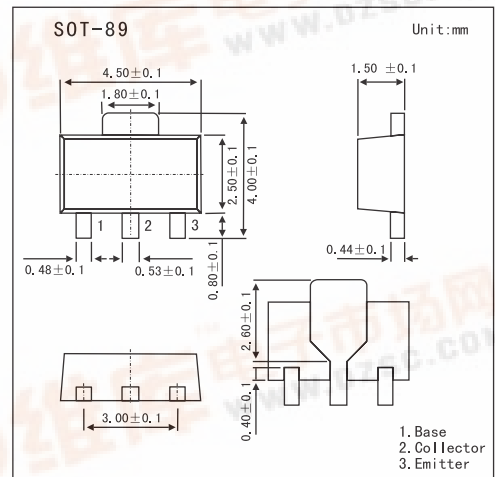


SMD Type Transistors

NPN Medium Power Transistor  
BC868

Features

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



Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage (open emitter)	V <sub>CB0</sub>	32	V
Collector-emitter voltage (open base)	V <sub>CEO</sub>	20	V
Emitter-base voltage (open collector)	V <sub>EB0</sub>	5	V
Collector current	I <sub>C</sub>	1	A
Peak collector current	I <sub>CM</sub>	2	A
Peak base current	I <sub>BM</sub>	200	mA
Total power dissipation	P <sub>tot</sub>	*1 and *2	0.5
		*1 and *3	0.85
		*1 and *4	1.2
Storage temperature	T <sub>stg</sub>	-65 to +150	°C
Junction temperature	T <sub>j</sub>	150	°C
ambient temperature	T <sub>amb</sub>	-65 to +150	°C
Thermal resistance from junction to ambient	R <sub>th(j-a)</sub>	*1 and *2	250
		*1 and *3	147
		*1 and *4	104
Thermal resistance from junction to solder point	R <sub>th(j-s)</sub>	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 cm<sup>2</sup>.

\*4.Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm<sup>2</sup>.



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

Parameter	Symbol	Testconditons	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	hFE	I <sub>C</sub> = 5 mA; V <sub>CE</sub> = 10 V	50		
		hFE	I <sub>C</sub> = 500 mA; V <sub>CE</sub> = 1 V	85		375
		hFE	I <sub>C</sub> = 1 A; V <sub>CE</sub> = 1 V	60		
	BC868-25	hFE	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

## ■ hFE Classification

TYPE	BC868	BC868-25
Marking	CAC	CDC