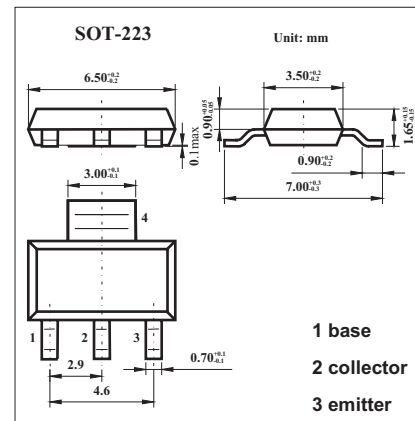


## PNP Medium Power Transistor

## BCP69

## ■ Features

- High current.
- Three current gain selections.
- 1.4 W total power dissipation.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-32	V
Collector-emitter voltage	$V_{CEO}$	-20	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current (DC)	$I_C$	-1	A
Peak collector current	$I_{CM}$	-2	A
Peak base current	$I_{BM}$	-200	mA
Total power dissipation	$P_{tot}$	* 1	0.625 W
		* 2	1 W
		* 3	1.4 W
Storage temperature	$T_{stg}$	-65 to +150	$^\circ\text{C}$
Junction temperature	$T_j$	150	$^\circ\text{C}$
Operating ambient temperature	$T_{amb}$	-65 to +150	$^\circ\text{C}$
Thermal resistance from junction to ambient *	$R_{th(j-a)}$	* 1	200 K/W
		* 2	125 K/W
		* 3	89 K/W
Thermal resistance from junction to solder point	$R_{th(j-s)}$	15	K/W

\*1 Device mounted on a FR4 PCB; single-sided copper; tinplated; standard footprint for SOT223.

\*2 Device mounted on a FR4 PCB; single-sided copper; tinplated; 1 cm<sup>2</sup> collector mounting pad.

\*3 Device mounted on a FR4 PCB; single-sided copper; tinplated; 6 cm<sup>2</sup> collector mounting pad.

**BCP69**■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	I <sub>CBO</sub>	I <sub>E</sub> = 0 A; V <sub>CB</sub> = -25 V			-100	nA
		I <sub>E</sub> = 0 A; V <sub>CB</sub> = -25 V; T <sub>j</sub> = 150 °C			-10	μA
Emitter cutoff current	I <sub>EBO</sub>	I <sub>C</sub> = 0 A; V <sub>EB</sub> = -5 V			-100	nA
DC current gain	BCP69	V <sub>CE</sub> = -10 V; I <sub>C</sub> = -5 mA	50			
		V <sub>CE</sub> = -1 V; I <sub>C</sub> = -500 mA	85		375	
		V <sub>CE</sub> = -1 V; I <sub>C</sub> = -1 A	60			
	BCP69-16	V <sub>CE</sub> = -1 V; I <sub>C</sub> = -500 mA	100		250	
	BCP69-16/IN		140		230	
BCP69-25	160			375		
Collector-emitter saturation voltage	V <sub>CEsat</sub>	I <sub>C</sub> = -1 A; I <sub>B</sub> = -100 mA;			-500	mV
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = -10 V; I <sub>C</sub> = -5 mA			-700	mV
		V <sub>CE</sub> = -1 V; I <sub>C</sub> = -1 A			-1	V
Collector capacitance	C <sub>c</sub>	I <sub>E</sub> = i <sub>e</sub> = 0 A; V <sub>CB</sub> = -10 V; f = 1 MHz		28		pF
Transition frequency	f <sub>T</sub>	I <sub>C</sub> = -50 mA; V <sub>CE</sub> = -5 V; f = 100 MHz	40	140		MHz

## ■ hFE Classification

TYPE	BCP69	BCP69-16	BCP69-16/IN	BCP69-25
Marking	BCP69	BCP69/16	69-16N	BCP69/25