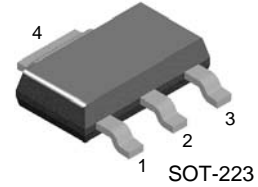


# BCP69

## PNP General Purpose Amplifier

- This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.0A.
- Sourced from Process 77.



1. Base 2. Collector 3. Emitter

### Absolute Maximum Ratings\* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage	-20	V
$V_{CBO}$	Collector-Base Voltage	-30	V
$V_{EBO}$	Emitter-Base Voltage	-5.0	V
$I_C$	Collector Current - Continuous	-1.5	A
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	- 55 ~ +150	$^\circ\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of  $150^\circ\text{C}$ .
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Thermal Characteristics\* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$P_D$	Total Device Dissipation	1.0	W
	Derate above $25^\circ\text{C}$	8.0	$\text{mW}/^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	125	$^\circ\text{C}/\text{W}$

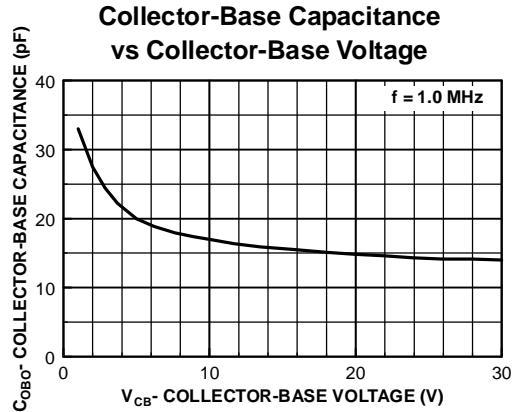
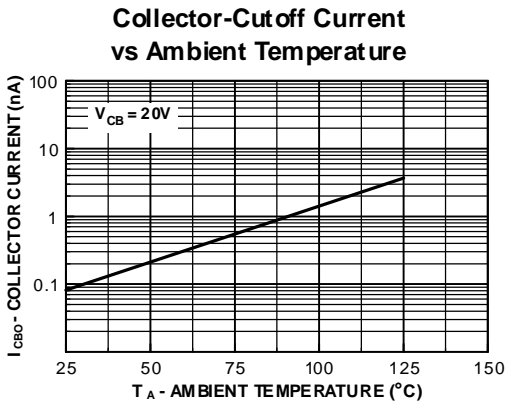
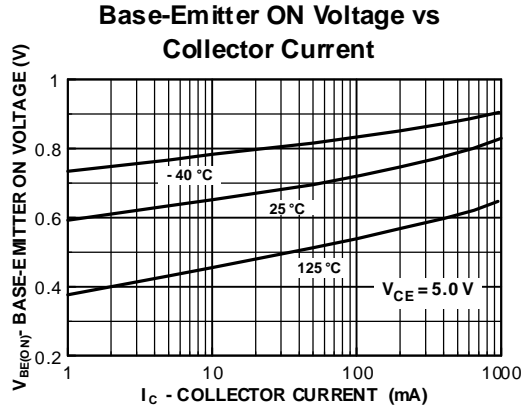
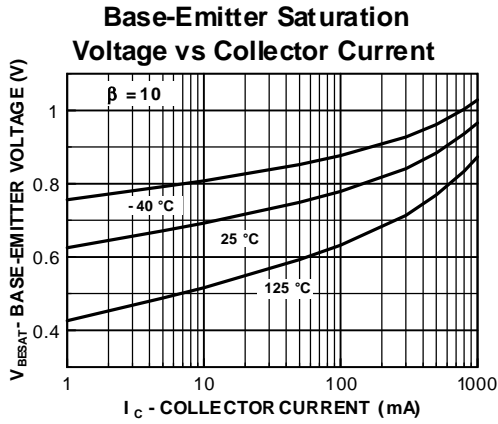
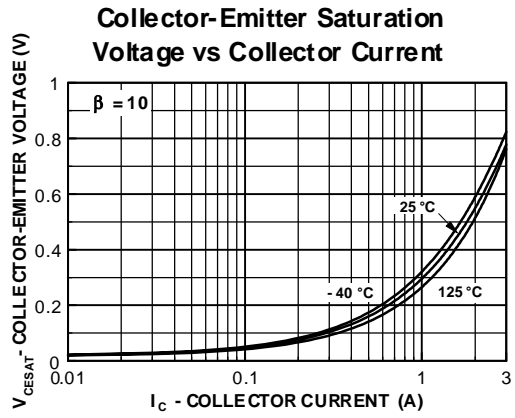
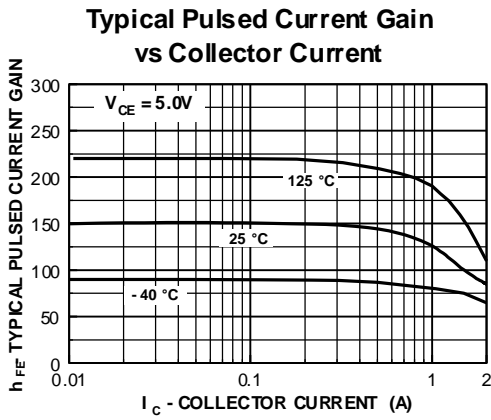
\* Device mounted on FR-4 PCB  $36\text{mm} \times 18\text{mm} \times 1.5\text{mm}$ ; mounting pad for the collector lead min.  $6\text{cm}^2$

### Electrical Characteristics\* $T_a = 25^\circ\text{C}$ unless otherwise noted

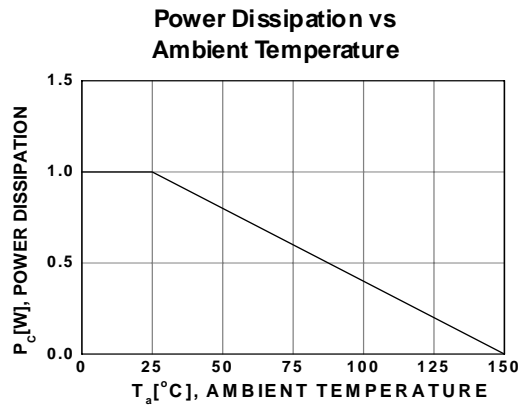
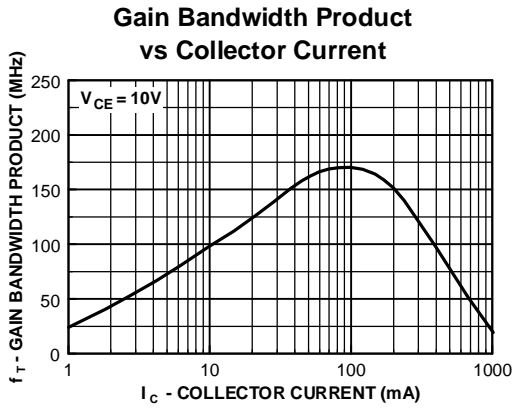
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{mA}, I_B = 0$	-20			V
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -1.0\text{mA}, I_E = 0$	-30			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -100\mu\text{A}, I_C = 0$	-5.0			V
$I_{CBO}$	Collector-Base Cutoff Current	$V_{CB} = -25\text{V}, I_E = 0$			-100	nA
		$V_{CB} = -25\text{V}, I_E = 0, T_j = 150^\circ\text{C}$			-10	$\mu\text{A}$
$I_{EBO}$	Emitter-Base Cutoff Current	$V_{EB} = -5.0\text{V}, I_C = 0$			-100	nA
$h_{FE}$	DC Current Gain	$I_C = -5\text{mA}, V_{CE} = -1.0\text{V}$	50			
		$I_C = -500\text{mA}, V_{CE} = -1.0\text{V}$	85		375	
		$I_C = -1.0\text{A}, V_{CE} = -1.0\text{V}$	60			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -1.0\text{A}, I_B = -100\text{mA}$			-0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -1.0\text{A}, V_{CE} = -1.0\text{V}$			-1.0	V
$C_{cb}$	Collector-Base Capacitance	$V_{CB} = -10\text{V}, I_E = 0, f = 1.0\text{MHz}$			30	pF
$h_{fe}$	Small-Signal Current Gain	$I_C = -50\text{mA}, V_{CE} = -10\text{V}, f = 20\text{MHz}$	2.5			

\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

## Typical Performance Characteristics

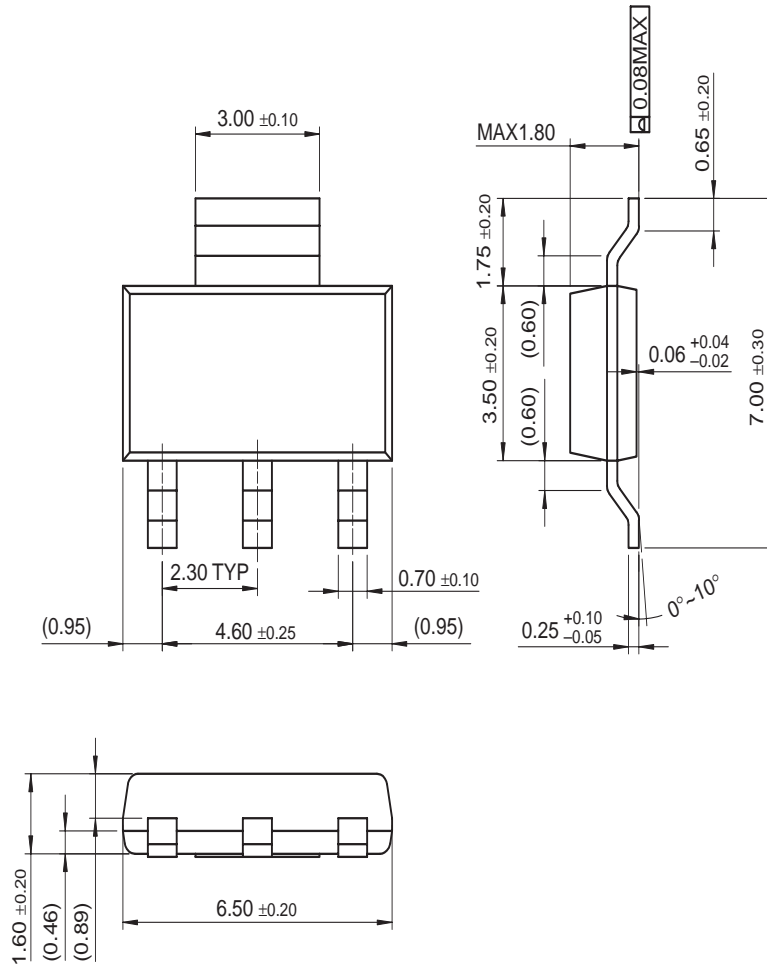


### Typical Performance Characteristics



Mechanical Dimensions

SOT-223



Dimensions in Millimeters

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EnSigna™	LittleFET™	PowerTrench®	TCM™	
FACT®	MICROCOUPLER™	QFET®	TinyBoost™	
FAST®	MicroFET™	QS™	TinyBuck™	
FASTr™	MicroPak™	QT Optoelectronics™	TinyPWM™	
FPS™	MICROWIRE™	Quiet Series™	TinyPower™	
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