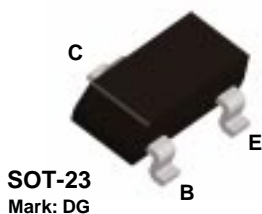


## BCW68G



### PNP General Purpose Amplifier

This device is designed for general purpose amplifier and switching applications at currents to 500 mA. Sourced from Process 63.

#### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	45	V
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	5.0	V
I <sub>C</sub>	Collector Current - Continuous	800	mA
T <sub>J</sub> , T <sub>stg</sub>	Operating and Storage Junction Temperature Range	-55 to +150	°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 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

#### Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		*BCW68C	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	350	mW
		2.8	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	357	°C/W

\*Device mounted on FR-4 PCB 40 mm X 40 mm X 1.5 mm.

# PNP General Purpose Amplifier

(continued)

BCW68G

## Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
<b>OFF CHARACTERISTICS</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}, I_B = 0$		45	V
$V_{(BR)CES}$	Collector-Base Breakdown Voltage	$I_C = 10 \text{ } \mu\text{A}$		60	V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100 \text{ } \mu\text{A}, I_E = 0$		60	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10 \text{ } \mu\text{A}, I_C = 0$		5.0	V
$I_{CES}$	Collector-Cutoff Current	$V_{CE} = 45 \text{ V}$ $V_{CE} = 45 \text{ V}, T_A = 150 \text{ }^\circ\text{C}$		20 10	nA $\mu\text{A}$
$I_{EBO}$	Emitter-Cutoff Current	$V_{EB} = 4.0 \text{ V}$		20	nA

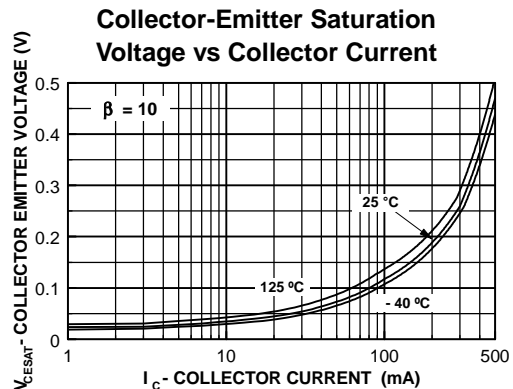
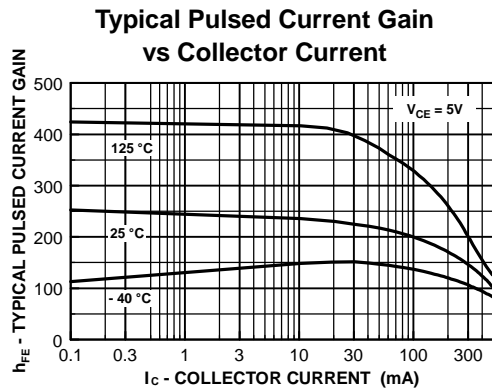
## ON CHARACTERISTICS

$h_{FE}$	DC Current Gain	$I_C = 10 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 100 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 300 \text{ mA}, V_{CE} = 1.0 \text{ V}$	120 160 60	400	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 300 \text{ mA}, I_B = 30 \text{ mA}$		1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$		2.0	V

## SMALL SIGNAL CHARACTERISTICS

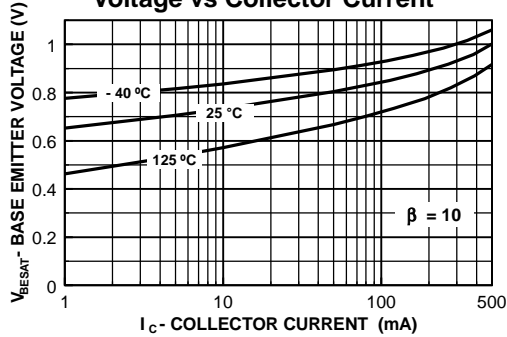
$f_T$	Current Gain - Bandwidth Product	$I_C = 20 \text{ mA}, V_{CE} = 10 \text{ V},$ $f = 100 \text{ MHz}$	100		MHz
$C_{obo}$	Output Capacitance	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$		18	pF
$C_{ibo}$	Input Capacitance	$V_{EB} = 0.5 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$		105	pF
NF	Noise Figure	$I_C = 0.2 \text{ mA}, V_{CE} = 5.0 \text{ V},$ $R_S = 1.0 \text{ k}\Omega, f = 1.0 \text{ kHz},$ $B_{WV} = 200 \text{ Hz}$		10	dB

## Typical Characteristics

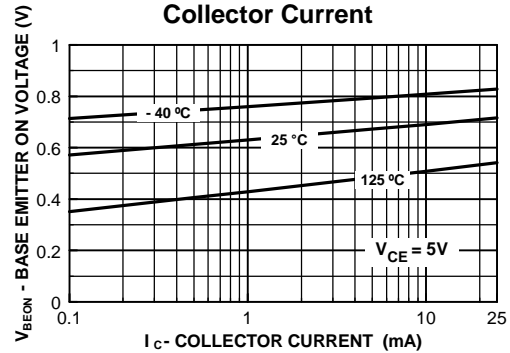


Typical Characteristics (continued)

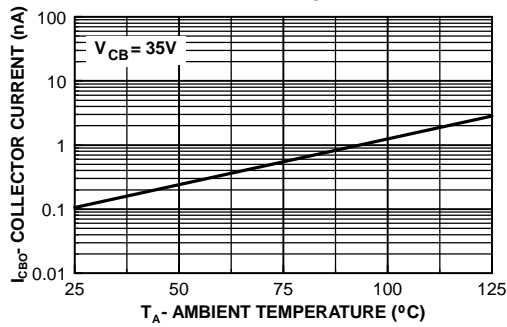
Base-Emitter Saturation Voltage vs Collector Current



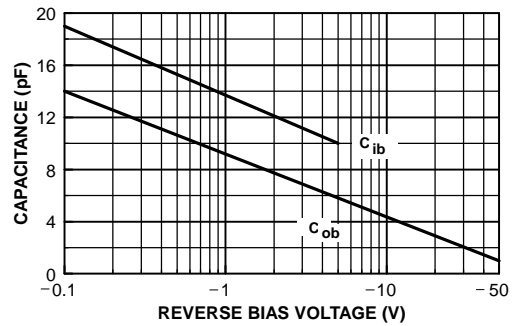
Base Emitter ON Voltage vs Collector Current



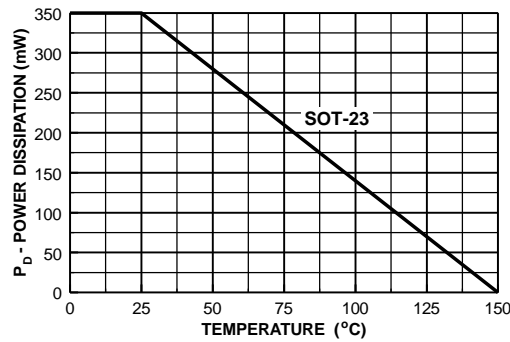
Collector-Cutoff Current vs. Ambient Temperature



Input and Output Capacitance vs Reverse Bias Voltage



Power Dissipation vs Ambient Temperature



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## PRODUCT STATUS DEFINITIONS

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