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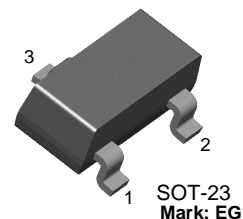
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# BCW66G

## NPN General Purpose Amplifier

- This device is designed for general purpose amplifier applications at collector currents to 500mA.
- Sourced from process 13.



1. Base 2. Emitter 3. Collector

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

Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage	45	V
$V_{CBO}$	Collector-Base Voltage	75	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current - Continuous	1	A
$T_J, T_{STG}$	Operating and Storage Junction 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 150degrees C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}$	75			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$	45			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}$	5			V
$I_{CES}$	Collector Cut-off Current	$V_{CB} = 45\text{V}, I_E = 0$			20	nA
		$V_{CB} = 45\text{V}, I_E = 0$ $T_A = 150^\circ\text{C}$			20	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 4\text{V}$			20	nA
$h_{FE}$	DC Current Gain	$V_{CE} = 10\text{V}, I_C = 100\mu\text{A}$	50			
		$V_{CE} = 1\text{V}, I_C = 10\text{mA}$	110			
		$V_{CE} = 1\text{V}, I_C = 100\text{mA}$	160		400	
		$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	60			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100\text{mA}, I_B = 10\text{mA}$			0.3	V
		$I_C = 500\text{mA}, I_B = 50\text{mA}$			0.7	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 500\text{mA}, I_B = 50\text{mA}$			2	V
$C_{obo}$	Output Capacitance	$V_{CB} = 10\text{V}, f = 1\text{MHz}$			12	pF
$C_{ibo}$	Input Capacitance	$V_{EB} = 0.5\text{V}, f = 1\text{MHz}$			80	pF
$f_T$	Current gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 20\text{mA}, f = 100\text{MHz}$	100			MHz
NF	Noise Figure	$V_{CE} = 5\text{V}, I_C = 0.2\text{mA}, R_S = 1\text{k}\Omega, f = 1\text{KHz}, BW = 200\text{Hz}$			10	dB
$t_{on}$	Turn-On Time	$I_{B1} = I_{B2} = 15\text{mA}$ $I_C = 150\text{mA}, R_L = 150\Omega$			100	ns
$t_{off}$	Turn-Off Time				400	

**Thermal Characteristics**

Symbol	Parameter	Min.	Typ.	Max.	Units
$P_D$	Total Device Dissipation Derate above 25°C			350 2.8	mW mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient			357	°C/W

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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