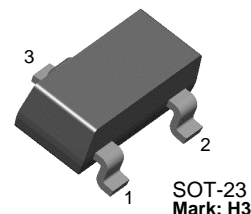


# BCW89

## PNP General Purpose Amplifier

- This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 300mA.
- Sourced from process 68.



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	-60	V
$V_{CES}$	Collector-Emitter Voltage	-60	V
$V_{EBO}$	Emitter-Base Voltage	-5.0	V
$I_C$	Collector current - Continuous	-500	mA
$T_J, T_{stg}$	Junction and Storage Temperature	-55 ~ +150	$^\circ\text{C}$

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

### NOTES:

- These ratings are based on a maximum junction temperature of 150 degrees C.
- These are 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

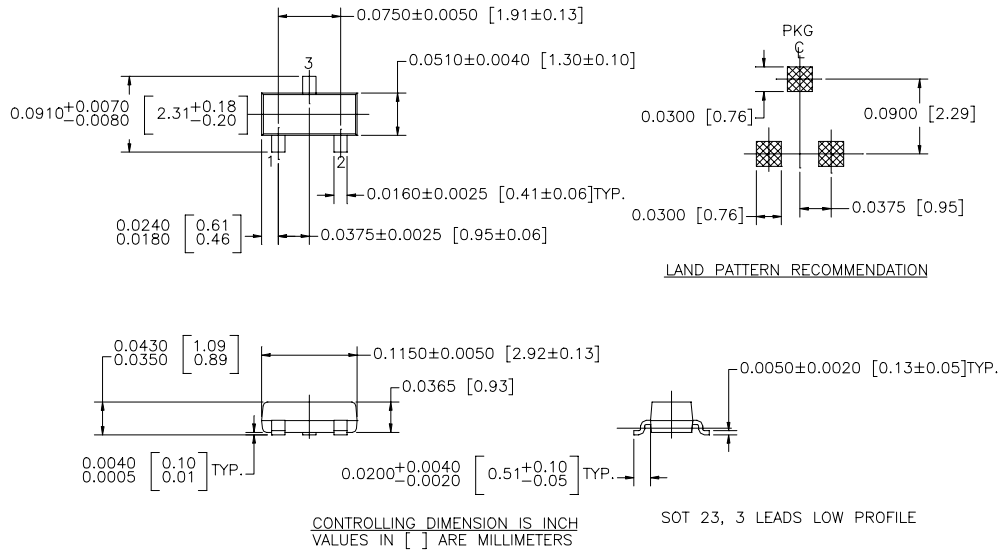
Symbol	Parameter	Test Condition	Min.	Max.	Units
<b>Off Characteristics</b>					
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = -10\mu\text{A}, I_E = 0$	-80		V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -2.0\text{mA}, I_B = 0$	-60		V
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	$I_C = -10\mu\text{A}, I_E = 0$	-60		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_C = -10\mu\text{A}, I_C = 0$	-5.0		V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -20\text{V}, I_E = 0$ $V_{CB} = -20\text{V}, I_E = 0, T_A = +100^\circ\text{C}$		-100 -10	nA $\mu\text{A}$
<b>On Characteristics</b>					
$h_{FE}$	DC Current Gain	$V_{CE} = -5.0\text{V}, I_C = -2.0\text{mA}$	120	260	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$		-0.3	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -5.0\text{V}, I_C = -2.0\text{mA}$	-0.6	-0.75	V
<b>Small Signal Characteristics</b>					
NF	Noise Figure	$V_{CE} = -5.0\text{V}, I_C = -200\mu\text{A}$ $R_S = 2.0\text{k}\Omega, f = 1.0\text{kHz}$ $B_W = 200\text{Hz}$		10	dB

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

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

# Package Dimensions

## SOT-23



- NOTE : UNLESS OTHERWISE SPECIFIED
1. STANDARD LEAD FINISH 150 MICROINCHES / 3.81 MICROMETERS  
MINIMUM TIN / LEAD (SOLDER) ON ALLOY 42
  2. REFERENCE JEDEC REGISTRATION TO-236, VARIATION AB, ISSUE G, DATED JUL 1993

Dimensions in Millimeters

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Bottomless <sup>™</sup>	FAST <sup>®</sup>	LittleFET <sup>™</sup>	Power247 <sup>™</sup>	SuperSOT <sup>™</sup> -3
CoolFET <sup>™</sup>	FAST <sup>™</sup>	MicroFET <sup>™</sup>	PowerTrench <sup>®</sup>	SuperSOT <sup>™</sup> -6
CROSSVOLT <sup>™</sup>	FRFET <sup>™</sup>	MicroPak <sup>™</sup>	QFET <sup>™</sup>	SuperSOT <sup>™</sup> -8
DOMET <sup>™</sup>	GlobalOptoisolator <sup>™</sup>	MICROWIRE <sup>™</sup>	QS <sup>™</sup>	SyncFET <sup>™</sup>
EcoSPARK <sup>™</sup>	GTO <sup>™</sup>	MSX <sup>™</sup>	QT Optoelectronics <sup>™</sup>	TinyLogic <sup>®</sup>
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EnSigna <sup>™</sup>	I <sup>2</sup> C <sup>™</sup>	OCX <sup>™</sup>	RapidConfigure <sup>™</sup>	UHC <sup>™</sup>
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The Power Franchise <sup>™</sup>		OPTOLOGIC <sup>®</sup>	SILENT SWITCHER <sup>®</sup>	VCX <sup>™</sup>
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## PRODUCT STATUS DEFINITIONS

### Definition of Terms

Datasheet Identification	Product Status	Definition
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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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