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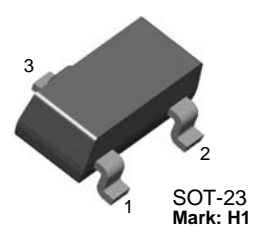
February 2010

# BCW69

## PNP General Purpose Amplifier

### Features

- This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 100mA.
- Sourced from process 68.



1. Base 2. Emitter 3. Collector

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	-50	V
$V_{CEO}$	Collector-Emitter Voltage	-45	V
$V_{EBO}$	Emitter-Base Voltage	-5.0	V
$I_C$	Collector Current - Continuous	-100	mA
$T_J, T_{STG}$	Junction and Storage Temperature	-55 to +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 degrees 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

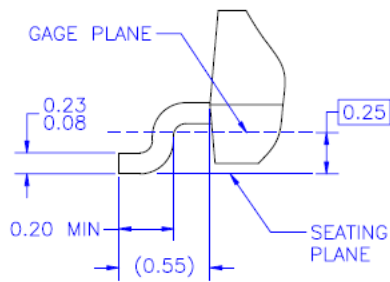
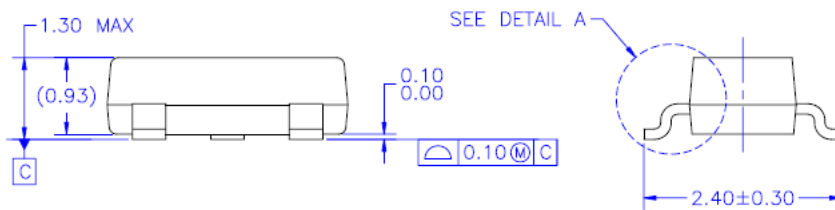
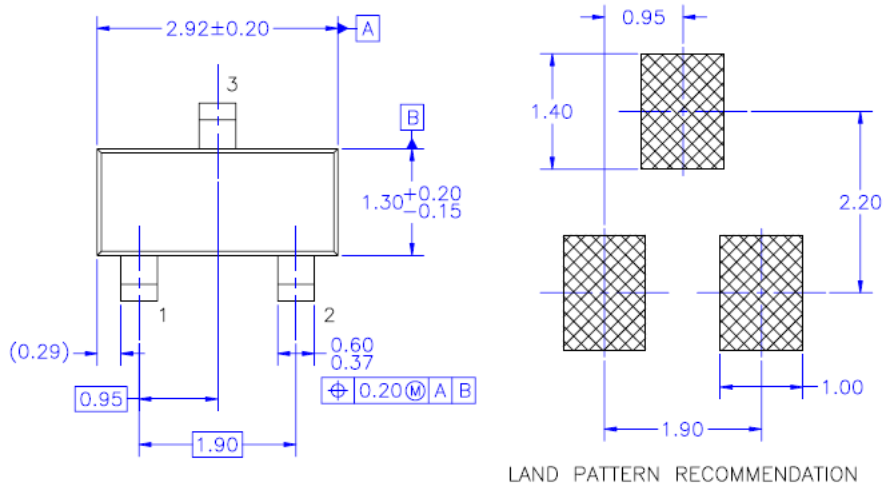
Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation Derate above $25^{\circ}\text{C}$	350	mW
		2.8	$\text{mW}/^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^{\circ}\text{C}/\text{W}$

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

Symbol	Parameter	Test Conditions	Min.	Max.	Units
<b>Off Characteristics</b>					
$BV_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=-10\mu\text{A}, I_E=0$	-50		V
$BV_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=-2.0\text{mA}, I_B=0$	-45		V
$BV_{(BR)CES}$	Collector-Emitter Breakdown Voltage	$I_C=-10\mu\text{A}, I_E=0$	-50		V
$BV_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=-10\mu\text{A}, I_C=0$	-5.0		V
$I_{CBO}$	Collector Cut-off 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

Physical Dimension

SOT-23



DETAIL A  
SCALE: 2X

NOTES: UNLESS OTHERWISE SPECIFIED





- A) REFERENCE JEDEC REGISTRATION TO-236, VARIATION AB, ISSUE H.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS ARE INCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR EXTRUSIONS.
- D) DIMENSIONING AND TOLERANCING PER ASME Y14.5M - 1994.
- E) DRAWING FILE NAME: MA03DREV9

Dimensions in Millimeters



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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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