

## **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<sub>C</sub>=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	-60	V
V <sub>CES</sub>	Collector-Emitter Voltage	-60	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5.0	V
I <sub>C</sub>	Collector current - Continuous	-500	mA
T <sub>J</sub> , T <sub>stg</sub>	Junction and Storage Temperature	-55 ~ +150	°C

<sup>\*</sup>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 state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Electrical Characteristics T<sub>C</sub>=25°C unless otherwise noted

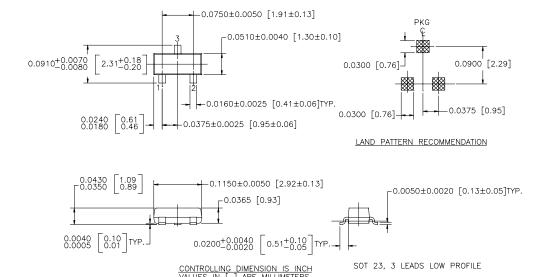
Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Charac	Off Characteristics				
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	$I_C = -10\mu A, I_E = 0$	-80		V
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	$I_C = -2.0 \text{mA}, I_B = 0$	-60		V
V <sub>(BR)CES</sub>	Collector-Emitter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

# Thermal Characteristics $T_A=25$ °C unless otherwise noted

Symbol	Parameter	Max.	Units
P <sub>D</sub>	Total Device Dissipation	350	mW
	Derate above 25°C	2.8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/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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CoolFET™	FASTr™	MicroFET™	PowerTrench <sup>®</sup>	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic <sup>®</sup>
E <sup>2</sup> CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	$I^2C^{TM}$	$OCX^{TM}$	RapidConfigure™	UHC™
Across the board.	. Around the world.™	OCXPro™	RapidConnect™	UltraFET <sup>®</sup>
The Power Franchise™		OPTOLOGIC <sup>®</sup>	SILENT SWITCHER®	VCX™
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