

# BC212B

## PNP General Purpose Amplifier

- This device is designed for general purpose amplifier application at collector currents to 100mA.
- Sourced from process 68.



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

Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current - Continuous	100	mA
$T_J, T_{STG}$	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  $150^\circ\text{C}$ .
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
<b>Off Characteristics</b>						
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 2\text{mA}$	50			V
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}$	60			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}$	5			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = 30\text{V}$			15	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 4\text{V}$			15	nA
<b>On Characteristics*</b>						
$h_{FE}$	DC Current Gain	$V_{CE} = 5\text{V}, I_C = 10\mu\text{A}$ $V_{CE} = 5\text{V}, I_C = 2\text{mA}$	40 60			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100\text{mA}, I_B = 5\text{mA}$			0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 100\text{mA}, I_B = 5\text{mA}$			1.4	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	0.6		0.72	V
<b>Small Signal Characteristics</b>						
$C_{ob}$	Output Capacitance	$V_{CE} = 10\text{V}, f = 1\text{MHz}$			6	pF
$h_{fe}$	Small Signal Current Gain	$V_{CE} = 5\text{V}, I_C = 2\text{mA}, f = 1\text{KHz}$	200		400	
NF	Noise Figure	$V_{CE} = 5\text{V}, I_C = 200\mu\text{A}, f = 1\text{KHz}$ $R_G = 2\text{K}\Omega, BW = 200\text{Hz}$			10	dB

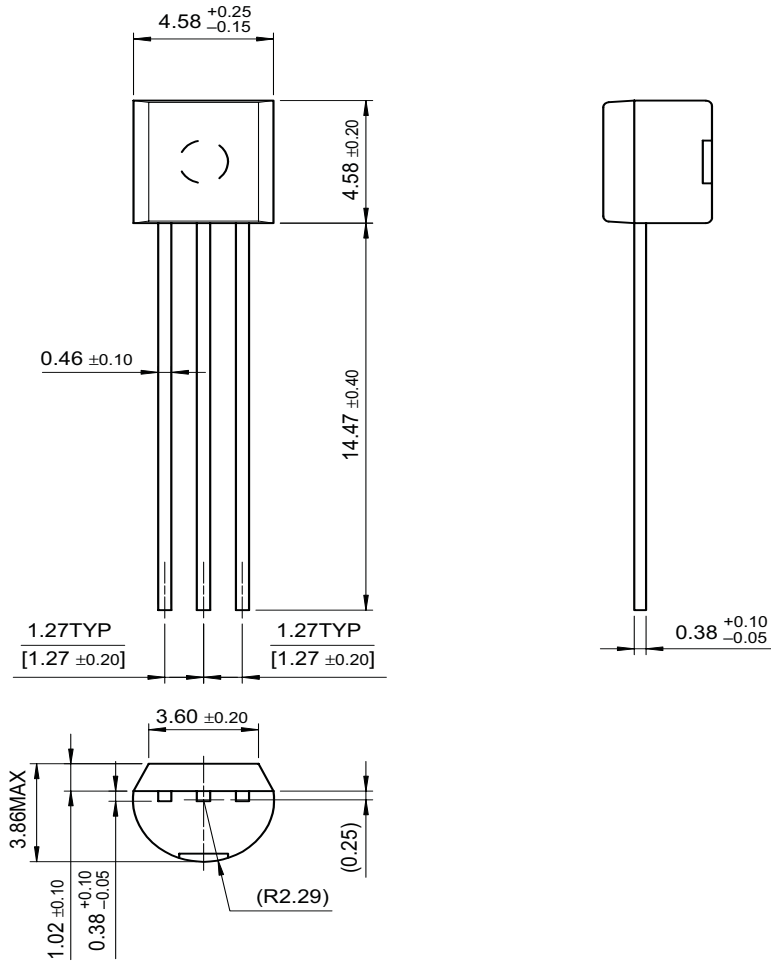
\* Pulse Test: Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2.0%

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

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation	350	mW
	Derate above $25^\circ\text{C}$	2.8	$\text{mW}/^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^\circ\text{C}/\text{W}$

# Package Dimensions

## TO-92



Dimensions in Millimeters

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