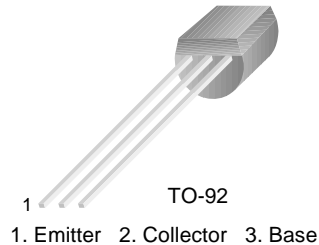


# BC213L

## PNP General Purpose Amplifier

- This device is designed for use as general purpose amplifiers and switches requiring collector currents to 300mA.
- Sourced from process 68.
- See PN200 for Characteristics.



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

Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage	-30	V
$V_{CBO}$	Collector-Base Voltage	-45	V
$V_{EBO}$	Emitter-Base Voltage	-5.0	V
$I_C$	Collector Current (DC) - Continuous	-500	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 degrees 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.	Max.	Units
<b>Off Characteristics</b>					
$V_{(BR)CEO}$	Collector-Emitter Voltage	$I_C = -2\text{mA}, I_B = 0$	-30		V
$V_{(BR)CBO}$	Collector-Base Voltage	$I_C = -10\mu\text{A}, I_E = 0$	-45		V
$V_{(BR)EBO}$	Emitter-Base Voltage	$I_E = -10\mu\text{A}, I_C = 0$	-5.0		V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -30\text{V}, I_E = 0$		-15	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = -4.0\text{V}, I_C = 0$		-15	nA
<b>On Characteristics *</b>					
$h_{FE}$	DC Current Gain	$V_{CE} = -5\text{V}, I_C = -10\mu\text{A}$ $V_{CE} = -5\text{V}, I_C = -2.0\text{mA}$	40 80	400	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$ $I_C = -100\text{mA}, I_B = -5.0\text{mA}$		-0.25 -0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -100\text{mA}, I_B = -5.0\text{mA}$		-1.1	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -5.0\text{V}, I_C = -2.0\text{mA}$	-0.6	-0.72	V
<b>Small Signal Characteristics</b>					
$f_T$	Current gain Bandwidth Product	$V_{CE} = -5.0\text{V}, I_C = -10\text{mA}$ $f = 100\text{MHz}$	200		MHz
NF	Noise Figure	$V_{CE} = -5.0\text{V}, I_C = -200\mu\text{A}$ $R_G = 2.0\text{k}\Omega, f = 1.0\text{KHz}$		10	dB
$h_{fe}$	Small Signal Current Gain	$I_C = -2.0\text{mA}, V_{CE} = -5.0\text{V}$ $f = 1.0\text{KHz}$	80		

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

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

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation	625	mW
	Derate above $25^\circ\text{C}$	5.0	mW/ $^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	$^\circ\text{C}/\text{W}$

# Package Dimensions

## TO-92



Dimensions in Millimeters

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## PRODUCT STATUS DEFINITIONS

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