

NPN General Purpose Amplifier

- This device is designed for use at general purpose amplifiers and switches requiring collector currents to 300mA.



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

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	40	V
V_{CBO}	Collector-Base Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current - 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:

- These ratings are based on a maximum junction temperature of 150 degrees C.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Characteristics					
$V_{(BR)CEO}$	Collector-Emitter Sustaining Voltage *	$I_C = 30\mu\text{A}, I_B = 0$	40		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_E = 0$	80		
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}, I_C = 0$	5.0		V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 40\text{V}, I_E = 0$		50	nA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 4.0\text{V}, I_C = 0$		25	nA
On Characteristics					
h_{FE}	DC Current Gain	$V_{CE} = 1\text{V}, I_C = 150\text{mA}$ $V_{CE} = 1\text{V}, I_C = 30\text{mA}$	100 100	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 150\text{mA}, I_B = 15\text{mA}$		0.25	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 150\text{mA}, V_{CE} = 1\text{V}$		1.1	V
Small Signal Characteristics					
h_{fe}	Small Signal current Gain	$I_C = 50\text{mA}, V_{CE} = 10\text{V}, f = 10\text{MHz}$	3.0	30	

* 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°C	5.0	mW/ $^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	$^\circ\text{C/W}$

Package Dimensions

TO-92



Dimensions in Millimeters

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