

PN4250



PNP General Purpose Amplifier

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

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	40	V
V _{CBO}	Collector-Base Voltage	40	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 to +150	°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

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		PN4250	
P _D	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	83.3	°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	200	°C/W

PNP General Purpose Amplifier

(continued)

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	$I_C = 5.0 \text{ mA}$, $I_B = 0$	40		V
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage*	$I_C = 10 \text{ }\mu\text{A}$, $I_B = 0$	40		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10 \text{ }\mu\text{A}$, $I_E = 0$	40		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10 \text{ }\mu\text{A}$, $I_C = 0$	5.0		V
I_{CBO}	Collector-Cutoff Current	$V_{CB} = 40 \text{ V}$, $I_E = 0$		10	nA
I_{EBO}	Emitter-Cutoff Current	$V_{EB} = 3.0 \text{ V}$, $I_C = 0$		20	nA

ON CHARACTERISTICS*

h_{FE}	DC Current Gain	$V_{CE} = 5.0 \text{ V}$, $I_C = 100 \text{ }\mu\text{A}$	250	700	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 10 \text{ mA}$, $I_B = 0.5 \text{ mA}$		0.25	V

SMALL SIGNAL CHARACTERISTICS

C_{ob}	Output Capacitance	$V_{CB} = 5.0 \text{ V}$, $f = 1.0 \text{ MHz}$		6.0	pF
h_{ie}	Input Impedance	$V_{CE} = 5.0 \text{ V}$, $I_C = 1.0 \text{ mA}$, $f = 1.0 \text{ kHz}$	6.0	20	k Ω
h_{oe}	Output Admittance		5.0	50	μmhos
h_{re}	Voltage Feedback Ratio			10	$\times 10^{-4}$
NF	Noise Figure	$V_{CE} = 5.0 \text{ V}$, $I_C = 250 \text{ }\mu\text{A}$, $R_S = 1.0 \text{ k}\Omega$, $f = 1.0 \text{ kHz}$, $B_W = 150 \text{ Hz}$		2.0	dB
		$V_{CE} = 5.0 \text{ V}$, $I_C = 20 \text{ }\mu\text{A}$, $R_S = 10 \text{ k}\Omega$, $f = 1.0 \text{ kHz}$, $B_W = 150 \text{ Hz}$		2.0	dB

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