

2N4125



PNP General Purpose Amplifier

This device is designed for use as general purpose amplifiers and switches requiring collector currents of 10 μ A to 100 mA. Sourced from Process 66. See 3906 for characteristics.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	30	V
V _{CBO}	Collector-Base Voltage	30	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _C	Collector Current - Continuous	200	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
		2N4125	
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*	$I_C = 1.0\text{ mA}, I_B = 0$	30		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10\text{ }\mu\text{A}, I_E = 0$	30		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\text{ }\mu\text{A}, I_C = 0$	4.0		V
I_{CBO}	Collector-Cutoff Current	$V_{CB} = 20\text{ V}, I_E = 0$		50	nA
I_{EBO}	Emitter-Cutoff Current	$V_{EB} = 3.0\text{ V}, I_C = 0$		50	nA

ON CHARACTERISTICS*

h_{FE}	DC Current Gain	$V_{CE} = 1.0\text{ V}, I_C = 2.0\text{ mA}$ $V_{CE} = 1.0\text{ V}, I_C = 50\text{ mA}$	50 25	150	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 50\text{ mA}, I_B = 5.0\text{ mA}$		0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 50\text{ mA}, I_B = 5.0\text{ mA}$		0.95	V

SMALL SIGNAL CHARACTERISTICS

C_{ob}	Output Capacitance	$V_{CB} = 5.0\text{ V}, f = 100\text{ kHz}$		4.5	pF
C_{ib}	Input Capacitance	$V_{BE} = 0.5\text{ V}, f = 100\text{ kHz}$		10	pF
h_{fe}	Small-Signal Current Gain	$I_C = 2.0\text{ mA}, V_{CE} = 10\text{ V},$ $f = 1.0\text{ kHz}$ $I_C = 10\text{ mA}, V_{CE} = 20\text{ V},$ $f = 100\text{ MHz}$	50 2.0	200	
NF	Noise Figure	$V_{CE} = 5.0\text{ V}, I_C = 100\text{ }\mu\text{A},$ $R_S = 1.0\text{ k}\Omega,$ $f = 10\text{ Hz to }15.7\text{ kHz},$		5.0	dB

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