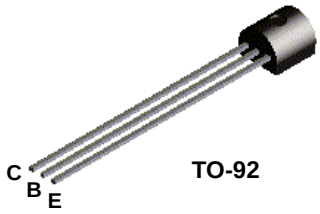
FAIRCHILD SEMICONDUCTOR™

Discrete POWER & Signal Technologies

PN4250A



TO-92

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	60	V
V_{CBO}	Collector-Base Voltage	60	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
		PN4250A	
P_D	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	°C/W

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PNP General Purpose Amplifier
(continued)

Electrical Characteristics
TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	I_C = 5.0 mA, I_B = 0	60		V
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage*	I_C = 10 µA, I_B = 0	60		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10 µA, I_E = 0	60		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10 µA, I_C = 0	5.0		V
I_{CBO}	Collector-Cutoff Current	V_{CB} = 50 V, I_E = 0		10	nA
I_{EBO}	Emitter-Cutoff Current	V_{EB} = 3.0 V, I_C = 0		20	nA
ON CHARACTERISTICS*					
h_{FE}	DC Current Gain	V_{CE} = 5.0 V, I_C = 100 µA	250	700	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 10 mA, I_B = 0.5 mA		0.25	V
SMALL SIGNAL CHARACTERISTICS					
C_{ob}	Output Capacitance	V_{CB} = 5.0 V, f = 1.0 MHz		6.0	pF
h_{fe}	Small-signal Current Gain	V_{CE} = 5.0 V, I_C = 1.0 mA, f = 1.0 kHz	250	800	
h_{ie}	Input Impedance		6.0	20	kΩ
h_{oe}	Output Admittance		5.0	50	µmhos
h_{re}	Voltage Feedback Ratio			10	$x10^{-4}$
NF	Noise Figure	V_{CE} = 5.0 V, I_C = 250 µA, R_S = 1.0 kΩ, f = 1.0 kHz, B_W = 150 Hz		2.0	dB
		V_{CE} = 5.0 V, I_C = 20 µA, R_S = 10 kΩ, f = 1.0 kHz, B_W = 150 Hz		2.0	dB

*Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2.0%