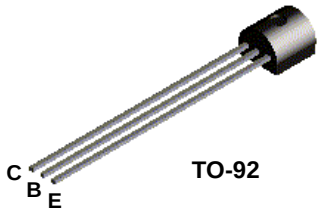
FAIRCHILD SEMICONDUCTOR TM

Discrete POWER & Signal Technologies

PN5134



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	10	V
V_{CBO}	Collector-Base Voltage	20	V
V_{EBO}	Emitter-Base Voltage	3.5	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
		PN5134	
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

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 = 10 mA, I_B = 0	10		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10 µA, I_E = 0	20		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10 µA, I_C = 0	3.5		V
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	I_C = 10 µA	20		V
I_{CBO}	Collector Cutoff Current	V_{CB} = 15 V, I_E = 0, T_A = 65 °C		10	µA
I_{CES}	Collector Cutoff Current	V_{CE} = 15 V, I_C = 0		0.4	µA
ON CHARACTERISTICS*					
h_{FE}	DC Current Gain	V_{CE} = 1.0 V, I_C = 10 mA V_{CE} = 0.4 V, I_C = 30 mA	20 15	150	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 10 mA, I_B = 1.0 mA I_C = 10 mA, I_B = 3.3 mA		0.25 0.20	V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 10 mA, I_B = 1.0 mA I_C = 10 mA, I_B = 3.3 mA	0.70 0.72	0.9 1.1	V V
SMALL SIGNAL CHARACTERISTICS					
C_{ob}	Output Capacitance	V_{CB} = 5.0 V, f = 1.0 MHz		4.0	pF
h_{fe}	Small-Signal Current Gain	I_C = 10 mA, V_{CE} = 10 V, f = 100 MHz	2.5		
SWITCHING CHARACTERISTICS					
t_s	Storage Time	$I_C = I_{B1} = I_{B2}$ = 10 mA		18	ns
t_{on}	Turn-on Time	V_{CC} = 3.0 V, I_C = 10 mA,		18	ns
t_d	Delay Time	I_{B1} = 3.3 mA		14	ns
t_r	Rise Time			12	ns
t_{off}	Turn-off Time	V_{CC} = 3.0V, I_C = 10 mA		18	ns
t_s	Storage Time	$I_{B1} = I_{B2}$ = 3.3 mA		13	ns
t_f	Fall Time			13	ns

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