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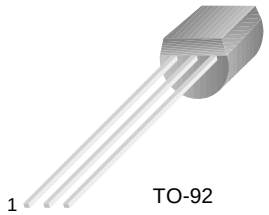
PN4141

NPN General Purpose Amplifier

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



TO-92

1. Emitter 2. Base 3. Collector

Absolute Maximum Ratings* T_A=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	30	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 ~ 150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaird.

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

Electrical Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Characteristics					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage *	I_C = 10mA, I_B = 0	30		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10μA, I_E = 0	60		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10μA, I_C = 0	5.0		V
I_{CEX}	Collector Cut-off Current	V_{CB} = 40V, V_{OB} = 3.0V		50	nA
I_{BL}	Base Cutoff Current	V_{CB} = 40V, V_{OB} = 3.0V		50	nA
On Characteristics					
h_{FE}	DC Current Gain	V_{CE} = 10V, I_C = 100μA V_{CE} = 10V, I_C = 1.0mA V_{CE} = 10V, I_C = 10mA V_{CE} = 10V, I_C = 150mA V_{CE} = 10V, I_C = 500mA V_{CE} = 1.0V, I_C = 150mA	35 50 75 100 30 50	 300 	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 150mA, I_B = 15mA I_C = 500mA, I_B = 50mA		0.4 1.6	V V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 150mA, I_B = 15mA I_C = 500mA, I_B = 50mA		1.3 2.6	V V
Small Signal Characteristics					
C_{ob}	Output Capacitance	V_{CB} = 10V, f = 100KHz		8.0	pF
h_{fe}	Small Signal Current Gain	I_C = 20mA, V_{CE} = 20V, f = 100MHz	2.5		
Switching Characteristics					
t_d	Delay Time	V_{CC} = 30V, I_C = 150mA I_{B1} = 15mA, V_{OB}(off) = 0.5V		10	ns
t_r	Rise Time			40	ns
t_s	Storage Time	V_{CC} = 30V, I_C = 150mA I_{B1} = I_{B2} = 15mA		250	ns
t_f	Fall Time		2.5	60	ns

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

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Thermal Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
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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Package Dimensions

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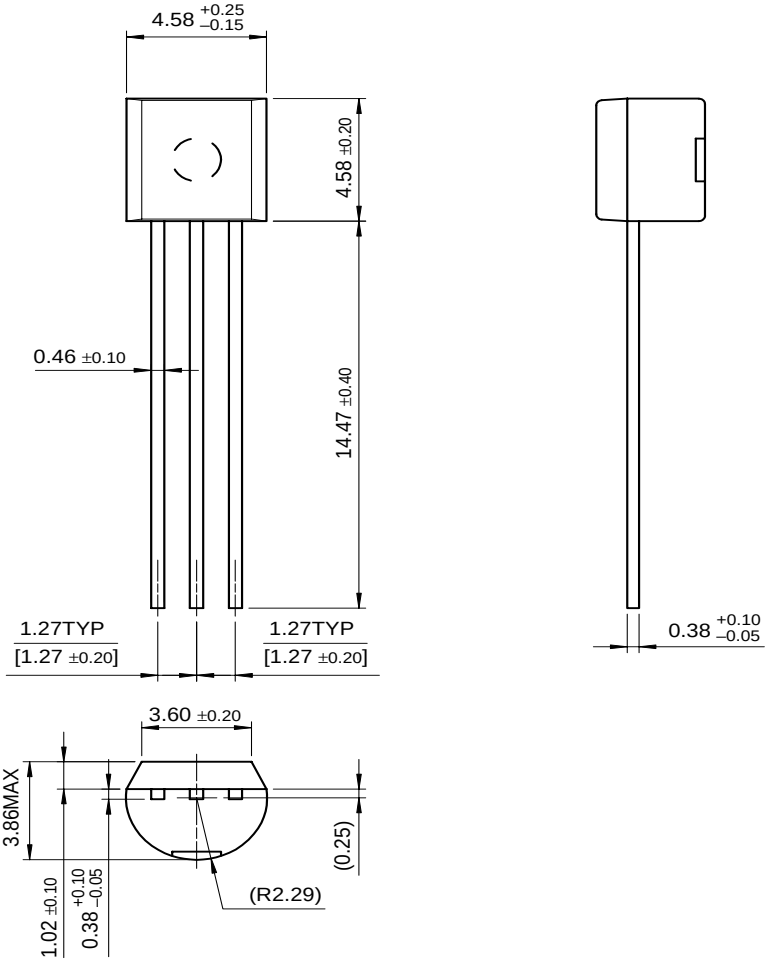

Dimensions in Millimeters

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