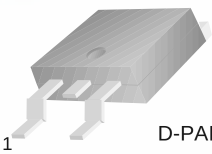
FAIRCHILD
SEMICONDUCTOR®

NZD560A

NPN Low Saturation Transistor

- These devices are designed for high current gain and low saturation voltage with collector currents up to 3.0A continuous.
- Sourced from process NA.



1.Base 2.Collector 3.Emitter

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

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	55	V
V_{CBO}	Collector-Base Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current - Continuous	3	A
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 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 operation.

Electrical Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 10mA, I_B = 0	55			V
BV_{CBO}	Emitter-Base Breakdown Voltage	I_E = 100µA, I_E = 0	80			V
BV_{EBO}	Collector-Base Breakdown Voltage	I_E = 100µA, I_C = 0	5			V
I_{CBO}	Collector-Base Cutoff Current	V_{CB} = 30V, I_E = 0 V_{CB} = 30V, I_E = 0, T_A = 100°C			100 10	nA µA
I_{EBO}	Emitter-Base Cutoff Current	V_{EB} = 4V, I_C = 0			10	nA
On Characteristics *						
h_{FE}	DC Current Gain	I_C = 100mA, V_{CE} = 2V I_C = 500mA, V_{CE} = 2V I_C = 1A, V_{CE} = 2V I_C = 3A, V_{CE} = 2V I_C = 1A, V_{CE} = 3V	70 250 80 25 200		 550	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 1A, I_B = 100mA I_C = 2A, I_B = 200mA I_C = 1A, I_B = 8mA			300 400 1.5	mV mV V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 1A, I_B = 100mA I_C = 1A, I_B = 8mA			1.25 1	V V
V_{BE}(on)	Base-Emitter On Voltage	I_C = 1A, V_{CE} = 2V			1	V
Small Signal Characteristics						
C_{obo}	Output Capacitance	V_{CB} = 10V, I_E = 0, f = 1MHz			30	pF
f_T	Transition Frequency	I_C = 100mA, V_{CE} = 5V, f = 100MHz	75			MHz

* Pulse Test: Pulse width ≤ 300µs, Duty cycle ≤ 2.0%

NZD560A

Thermal Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation	1.5	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	83	°C/W

Typical Characteristics

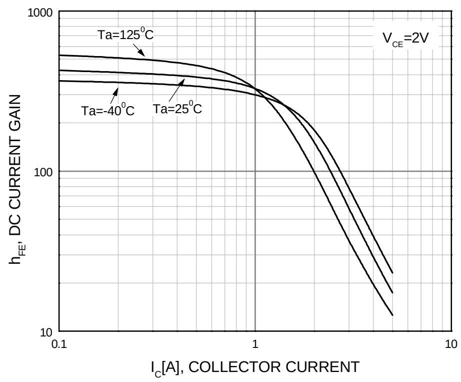


Figure 1. DC Current Gain

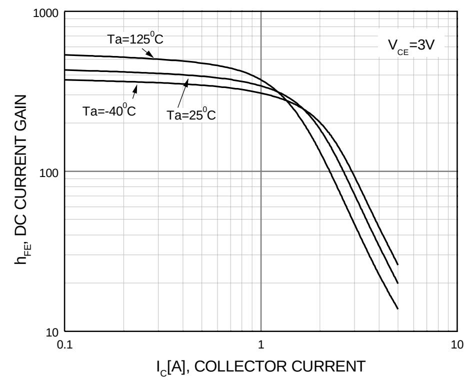


Figure 2. DC Current Gain

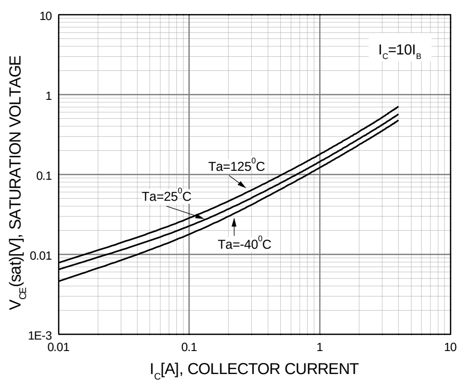


Figure 3. Colletor-Emitter Saturation Voltage

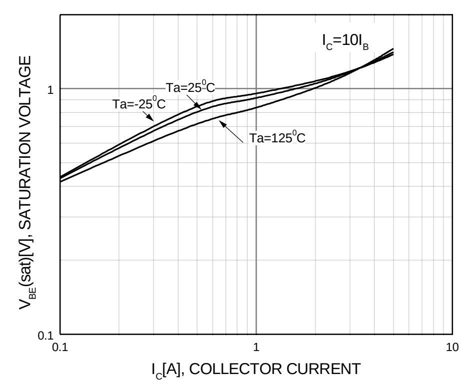


Figure 4. Base-Emitter Saturation Voltage

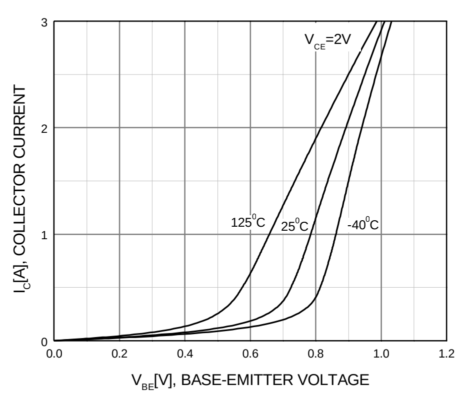


Figure 5. Base-Emitter On Voltage

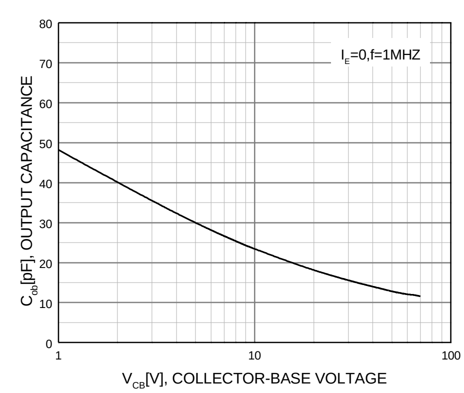


Figure 6. Collector Output Capacitance

Typical Characteristics (Continued)

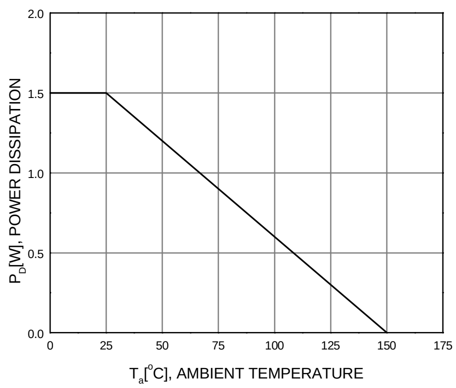
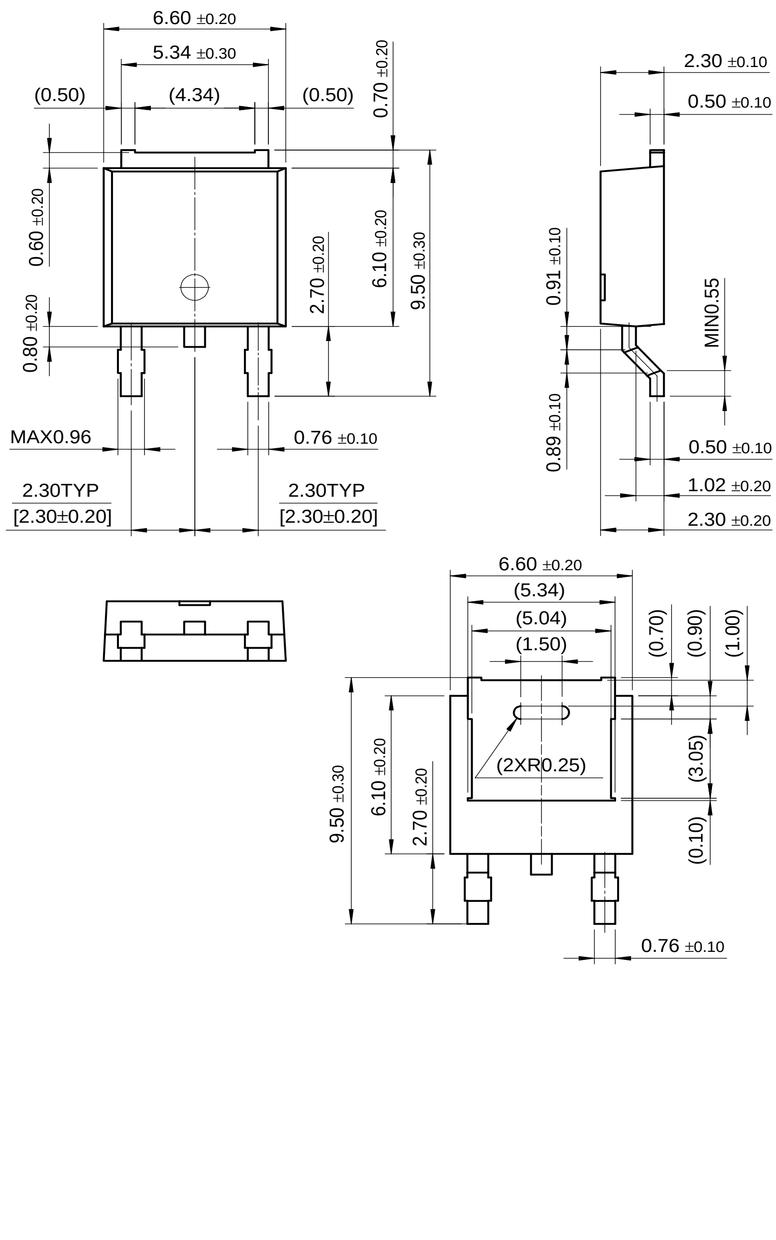


Figure 7. Power Derating

Package Dimensions

D-PAK



Dimensions in Millimeters

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CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
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EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
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