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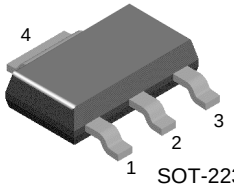
SEMICONDUCTOR®

NZT560/NZT560A

NPN Low Saturation Transistor

- These devices are designed with high current gain and low saturation voltage with collector currents up to 3A continuous.



SOT-223

1. Base 2. Collector 3. Emitter

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

Symbol	Parameter	NZT560/NZT560A	Units
V_{CEO}	Collector-Emitter Voltage	60	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°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 Conditions		Min.	Typ.	Max.	Units
Off Characteristics							
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 10mA		60			V
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = 100µA		80			V V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 100µA		5			V
I_{CBO}	Collector Cutoff Current	V_{CB} = 30V V_{CB} = 30V, T_A = 100°C				100 10	nA µA
I_{EBO}	Emitter Cutoff Current	V_{EB} = 4V				100	nA
On Characteristics *							
h_{FE}	DC Current Gain	I_C = 100mA, V_{CE} = 2V		70			
		I_C = 500mA, V_{CE} = 2V	NZT560	100		300	
			NZT560A	250		550	
		I_C = 1A, V_{CE} = 2V		80			
		I_C = 3A, V_{CE} = 2V		25			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 1A, I_B = 100mA				300	mV
		I_C = 3A, I_B = 300mA	NZT560			450	mV
			NZT560A			400	mV
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 1A, I_B = 100mA				1.25	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%

Thermal Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Max.		Units
		NZT560	NZT560A	
P_D	Total Device Dissipation	1		W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	125		°C/W

Typical Characteristics

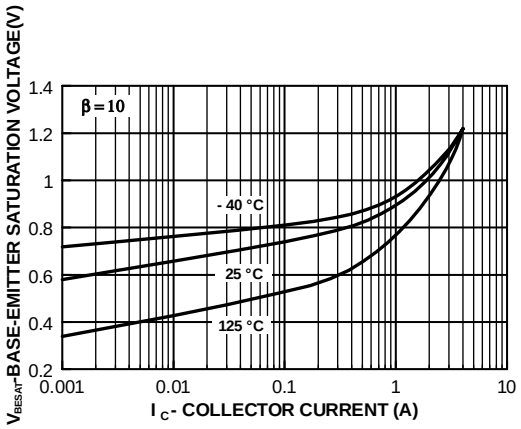


Figure 1. Base-Emitter Saturation Voltage vs Collector Current

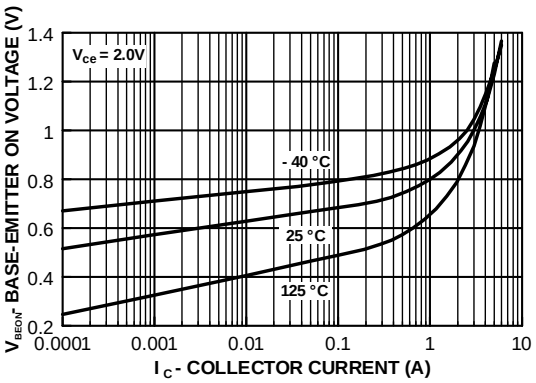


Figure 2. Base-Emitter On Voltag vs Collector Current

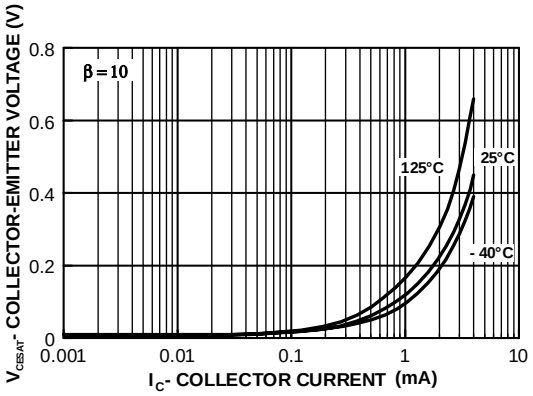


Figure 3. Collector-Emitter Saturation Voltage vs Collector Current

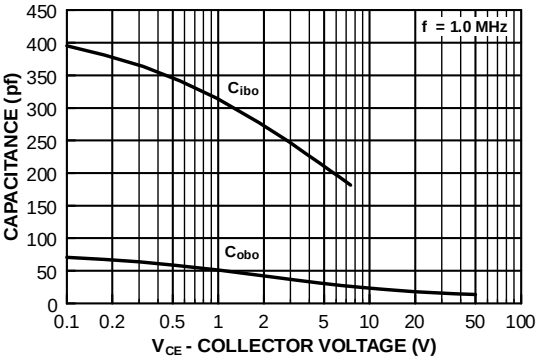


Figure 4. Input/Output Capacitance vs Reverse Bias Voltage

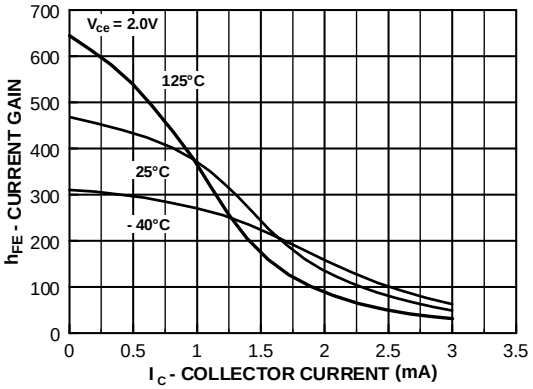
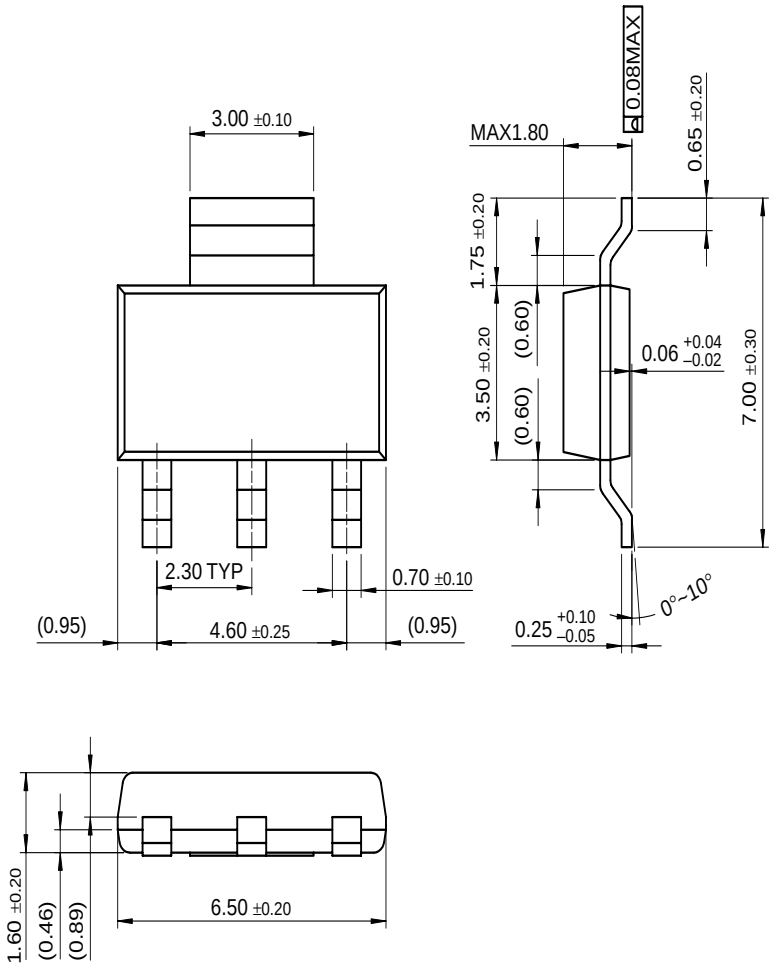


Figure 5. Current Gain vs Collector Current

Package Dimensions

SOT-223



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
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EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
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