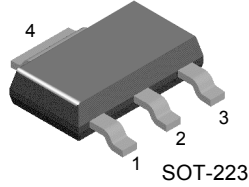


# NZT660/NZT660A

## PNP Low Saturation Transistor

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



1. Base 2. Collector 3. Emitter

### Absolute Maximum Ratings\* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	NZT660	NZT660A	Units
$V_{CEO}$	Collector-Emitter Voltage	60	60	V
$V_{CBO}$	Collector-Base Voltage	80	60	V
$V_{EBO}$	Emitter-Base Voltage	5	5	V
$I_C$	Collector Current - Continuous	3	3	A
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	- 55 ~ +150	- 55 ~ +150	$^\circ\text{C}$

\* 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  $150^\circ\text{C}$ .
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Electrical Characteristics $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$	60			v
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}$	80 60			V V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100\mu\text{A}$	5			v
$I_{CBO}$	Collector-Base Cutoff Current	$V_{CB} = 30\text{V}$ $V_{CB} = 30\text{V}, T_A = 100^\circ\text{C}$			100 10	nA $\mu\text{A}$
$I_{EBO}$	Emitter-Base Cutoff Current	$V_{EB} = 4\text{V}$			100	nA
<b>On Characteristics *</b>						
$h_{FE}$	DC Current Gain	$I_C = 100\text{mA}, V_{CE} = 2\text{V}$ $I_C = 500\text{mA}, V_{CE} = 2\text{V}$ $I_C = 1\text{A}, V_{CE} = 2\text{V}$ $I_C = 3\text{A}, V_{CE} = 2\text{V}$	70 100 250 80 25		300 550	

**Electrical Characteristics**  $T_a = 25^\circ\text{C}$  unless otherwise noted (Continued)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 1A, I_B = 100mA$			300	mV
		$I_C = 3A, I_B = 300mA$			550	mV
					500	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
<b>Small Signal Characteristics</b>						
$C_{obo}$	Output Capacitance	$V_{CB} = 10V, I_E = 0, f = 1MHz$			45	pF
$f_T$	Transition Frequency	$I_C = 100mA, V_{CE} = 5V, f = 100MHz$	75			MHz

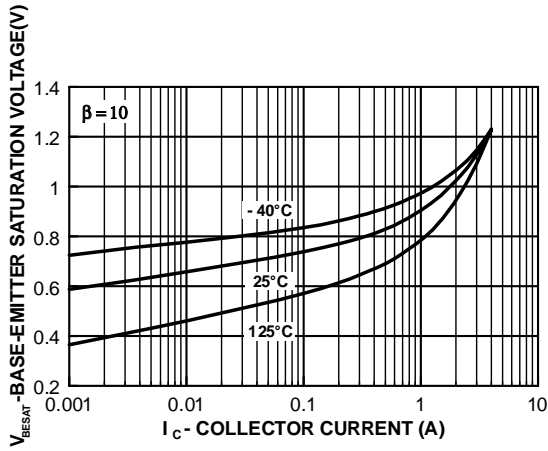
\* Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$

**Thermal Characteristics**  $T_a = 25^\circ\text{C}$  unless otherwise noted

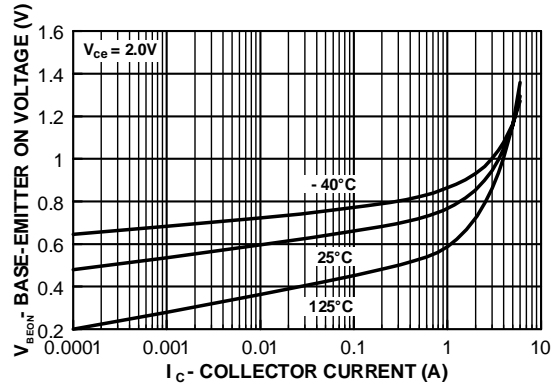
Symbol	Parameter	Nzt660/Nzt660a	Units
$P_D$	Total Device Dissipation	2	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$

## Typical Performance Characteristics

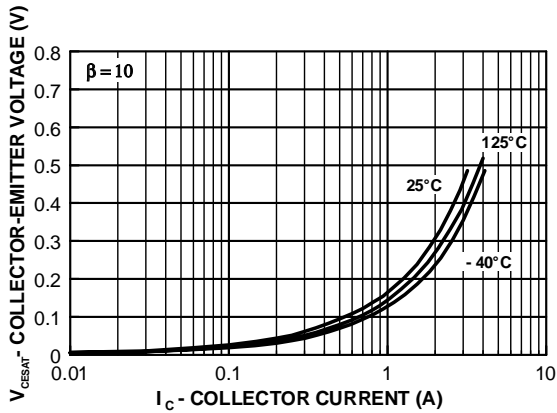
**Figure 1. Base-Emitter Saturation Voltage vs Collector Current**



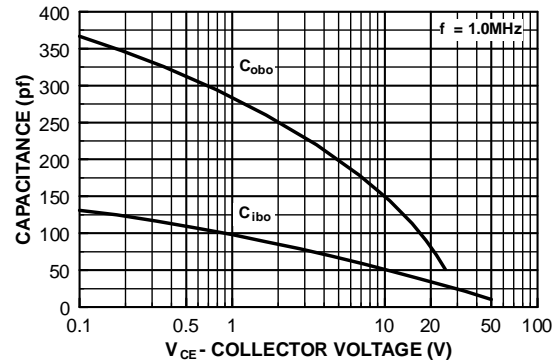
**Figure 2. Base-Emitter On Voltage vs Collector Current**



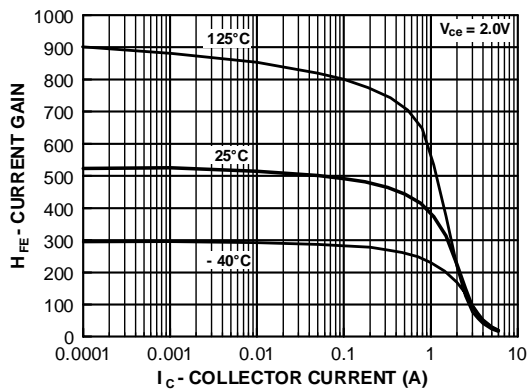
**Figure 3. Collector-Emitter Saturation Voltage vs Collector Current**



**Figure 4. Input/Output Capacitance vs Reverse Bias Voltage**

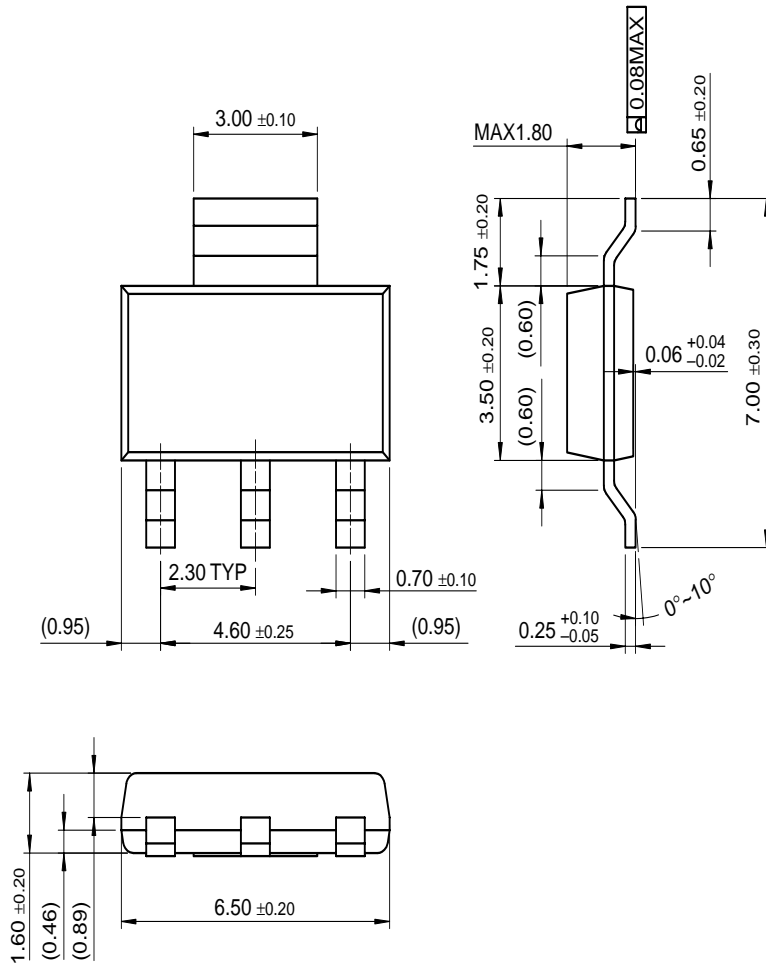


**Figure 5. Current Gain vs Collector Current**



Mechanical Dimensions

SOT-223



Dimensions in Millimeters

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EnSigna™	i-Lo™	MSXPro™	Quiet Series™	TINYOPTO™
FACT™	ImpliedDisconnect™	OCX™	RapidConfigure™	TruTranslation™
FACT Quiet Series™		OCXPro™	RapidConnect™	UHC™
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Rev. I15



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