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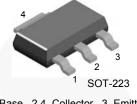
October 2014



NZT560 / NZT560A NPN Low-Saturation Transistor

Features

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



1. Base 2,4. Collector 3. Emitter

Ordering Information

Part Number	Marking	Package	Packing Method		
NZT560	560	SOT-223 4L	Tape and Reel		
NZT560A	560A	SOT-223 4L	Tape and Reel		

Absolute Maximum Ratings(1),(2)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^{\circ}$ C unless otherwise noted.

Symbol	Parameter	Value	Unit
V _{CEO}	Collector-Emitter Voltage	60	V
V _{CBO}	Collector-Base Voltage	80	V
V _{EBO}	Emitter-Base Voltage	5	V
۱ _C	Collector Current - Continuous	3	A
T _J , T _{STG}	Operating and Storage Junction Temperature Range	-55 to +150	°C

Notes:

- 1. These ratings are based on a maximum junction temperature of 150°C.
- 2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

Thermal Characteristics⁽³⁾

Values are at $T_A = 25^{\circ}C$ unless otherwise noted.

Symbol	Parameter	Max.	Unit
P _D	Total Power Dissipation	1	W
	Derate Above 25°C	8	mW/°C
R _{θJA}	Thermal Resistance, Junction-to-Ambient	125	°C/W

Note:

3. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

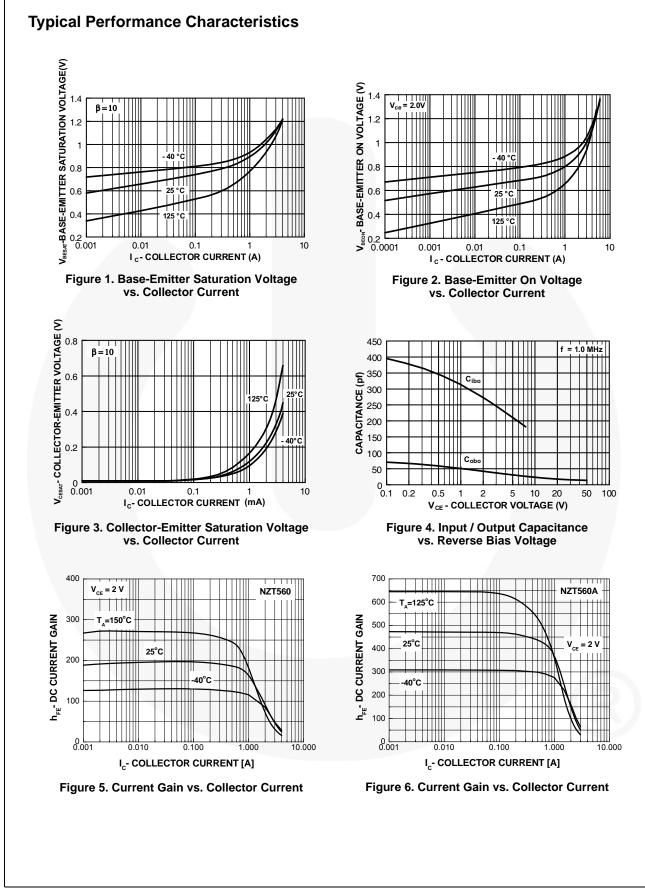
Electrical Characteristics

Values are at $T_A = 25^{\circ}C$ unless otherwise noted.

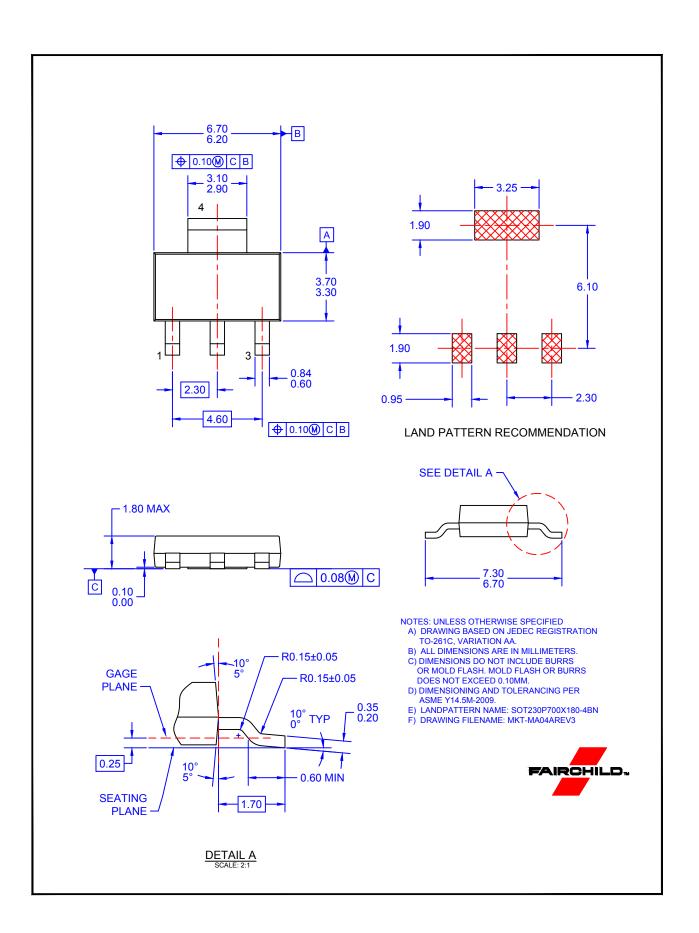
Symbol	Parameter	Conditions		Min.	Max.	Unit
BV _{CEO}	Collector-Emitter Breakdown Voltage	I _C = 10 mA, I _B = 0		60		V
BV _{CBO}	Collector-Base Breakdown Voltage	I _C = 100 μA, I _E = 0		80		V
BV _{EBO}	Emitter-Base Breakdown Voltage	I _E = 100 μA, I _C = 0		5		V
I _{CBO}	Collector Cut-Off Current	V _{CB} = 30 V, I _E = 0			100	nA
		$V_{CB} = 30 \text{ V}, \text{ I}_{E} = 0, \text{ T}_{A} = 100^{\circ}\text{C}$			10	μA
I _{EBO}	Emitter Cut-Off Current	$V_{EB} = 4 V, I_{C} = 0$			100	nA
	DC Current Gain ⁽⁴⁾	I _C = 100 mA, V _{CE} = 2 V		70		
		I _C = 500 mA, V _{CE} = 2 V	NZT560	100	300	
h _{FE}			NZT560A	250	550	
		I _C = 1 A, V _{CE} = 2 V		80		
		I _C = 3 A, V _{CE} = 2 V		25		
V _{CE} (sat)	Collector-Emitter Saturation Voltage ⁽⁴⁾	I _C = 1 A, I _B = 100 mA			300	
		I _C = 3 A, I _B = 300 mA	NZT560		450	mV
			NZT560A		400	
V _{BE} (sat)	Base-Emitter Saturation Voltage ⁽⁴⁾	I _C = 1 A, I _B = 100 mA			1.25	V
V _{BE} (on)	Base-Emitter On Voltage ⁽⁴⁾	I _C = 1 A, V _{CE} = 2 V			1	V
C _{obo}	Output Capacitance	V _{CB} = 10 V, I _E = 0, f = 1.0 MHz			30	pF
f _T	Transition Frequency	I _C = 100 mA, V _{CE} = 5 V, f = 100 MHz		75		MHz

Note:

4. Pulse test: pulse width \leq 300 µs, duty cycle \leq 2.0%



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