



ZXTN5551G

160V NPN VOLTAGE TRANSISTOR

Features

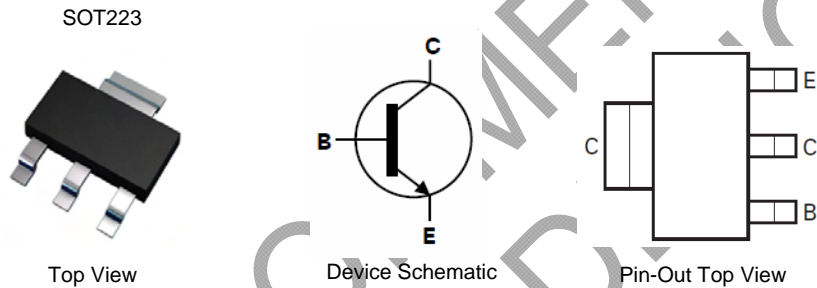
- $BV_{CEO} > 160V$
- $BV_{EBO} > 6V$
- $I_C = 600mA$ Continuous Collector Current
- Low Saturation Voltage (150mV max @10mA)
- h_{FE} specified up to 50mA for a high gain hold up
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOT223
- Case material: Molded Plastic. "Green" Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Leads, Solderable per MIL-STD-202 Method 208
- Weight: 0.112 grams (Approximate)

Applications

- High Voltage Amplification

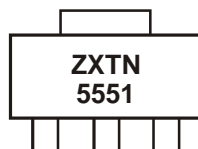


Ordering Information (Note 4)

Part Number	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTN5551GTA	ZXTN5551	7	12	1,000
ZXTN5551GTC	ZXTN5551	13	12	4,000

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See <http://www.diodes.com> for more information about Diodes Incorporated's definitions of Halogen and Antimony free, "Green" and Lead-Free.
 3. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com>

Marking Information



ZXTN5551 = Product type Marking Code

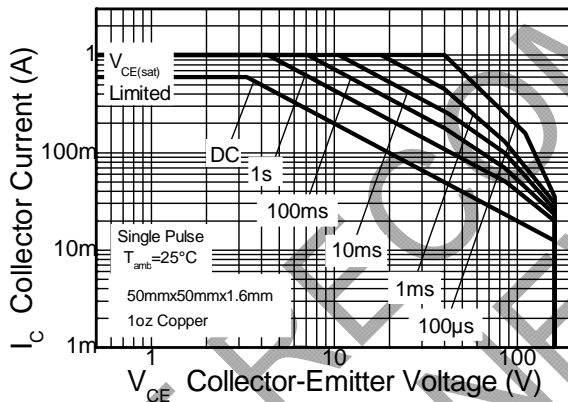
Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6	V
Continuous Collector Current	I_C	600	mA

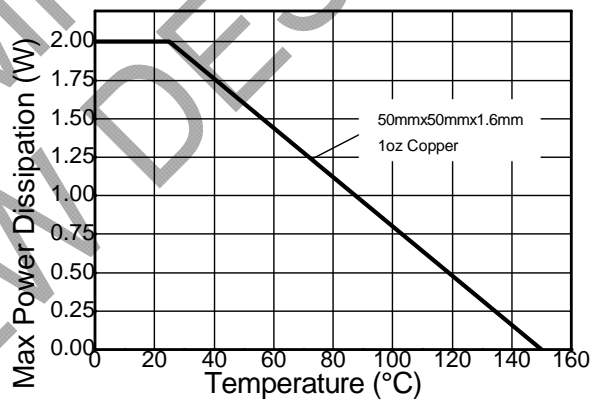
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	2	W
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Thermal Resistance, Junction to Leads (Note 6)	$R_{\theta JL}$	34.05	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

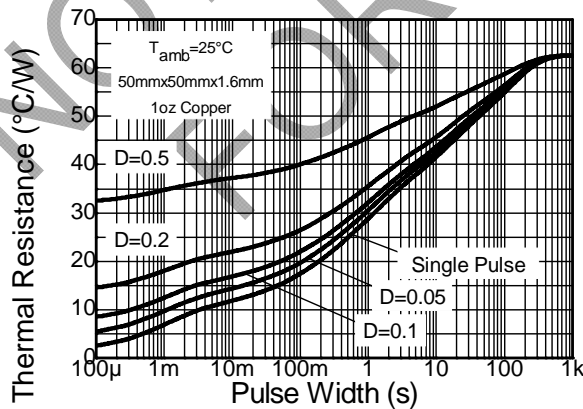
Notes: 5. Device mounted on 50mm X 50mm X 1.6mm FR-4 PCB with high coverage of single sided 1 oz. copper, in still air condition
6. Thermal resistance from junction to solder-point (at the end of the collector lead).



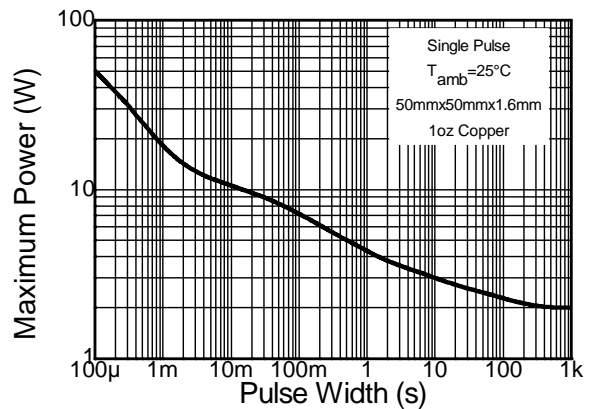
Safe Operating Area



Derating Curve



Transient Thermal Impedance



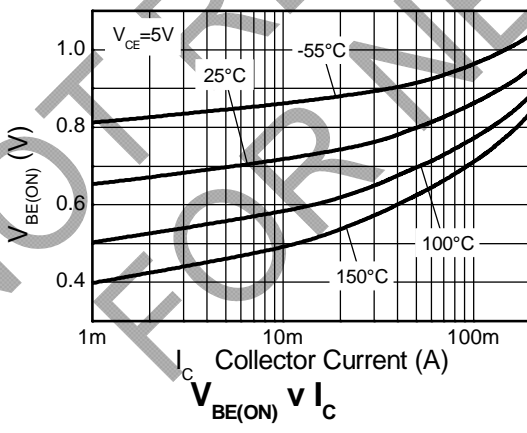
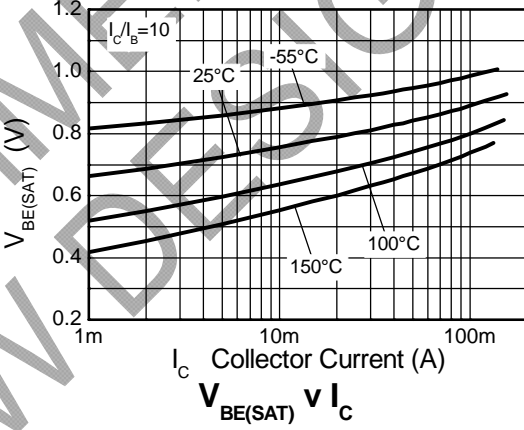
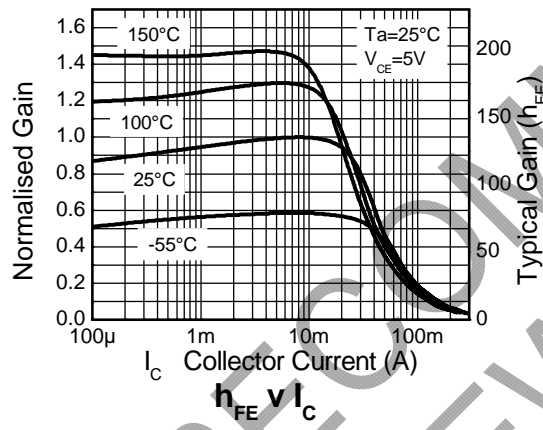
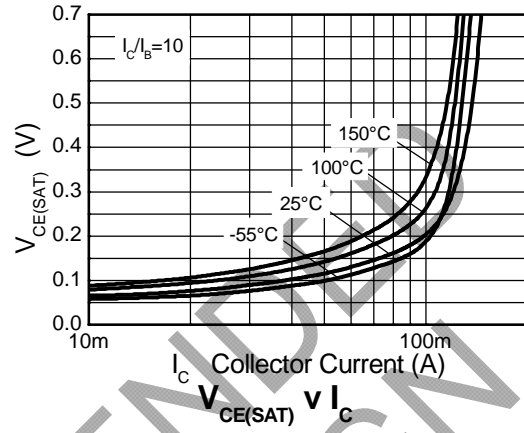
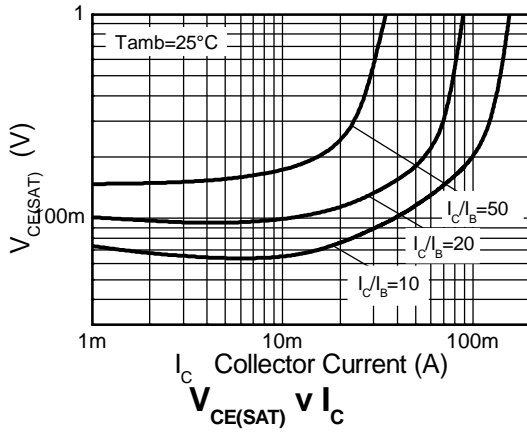
Pulse Power Dissipation

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CB0}	180	270	—	V	I _C = 100μA
Collector-Emitter Breakdown Voltage (Note 7)	BV _{CEO}	160	200	—	V	I _C = 1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	6.0	7.85	—	V	I _E = 100μA
Collector Cutoff Current	I _{CBO}	—	<1	50	nA	V _{CB} = 120V
		—	—	50	μA	V _{CB} = 120V, T _A = +100°C
Collector-Emitter Saturation Voltage (Note 7)	V _{CE(sat)}	—	65	150	mV	I _C = 10mA, I _B = 1mA
		—	115	200	mV	I _C = 50mA, I _B = 5mA
Base-Emitter Saturation Voltage (Note 7)	V _{BE(sat)}	—	760	1000	mV	I _C = 10mA, I _B = 1mA
		—	840	1200	mV	I _C = 50mA, I _B = 5mA
DC Current Gain (Note 7)	h _{FE}	80	130	—	—	V _{CE} = 5V, I _C = 1mA
		80	145	250	—	V _{CE} = 5V, I _C = 10mA
		30	65	—	—	V _{CE} = 5V, I _C = 50mA
Transition Frequency	f _T	—	130	—	MHz	V _{CE} = 10V, I _C = 10mA, f = 100MHz
Small Signal	h _{FE}	50	—	260	—	V _{CE} = 10V, I _C = 10mA, f = 1kHz
Output Capacitance (Note 7)	C _{obo}	—	—	6	pF	V _{CB} = 10V, f = 1MHz
Delay Time	t _(d)	—	95	—	ns	
Rise Time	t _(r)	—	64	—	ns	
Storage Time	t _(s)	—	1256	—	ns	V _{CC} = 10V, I _C = 10mA, I _{B1} = I _{B2} = 1mA
Delay Time	t _(f)	—	140	—	ns	

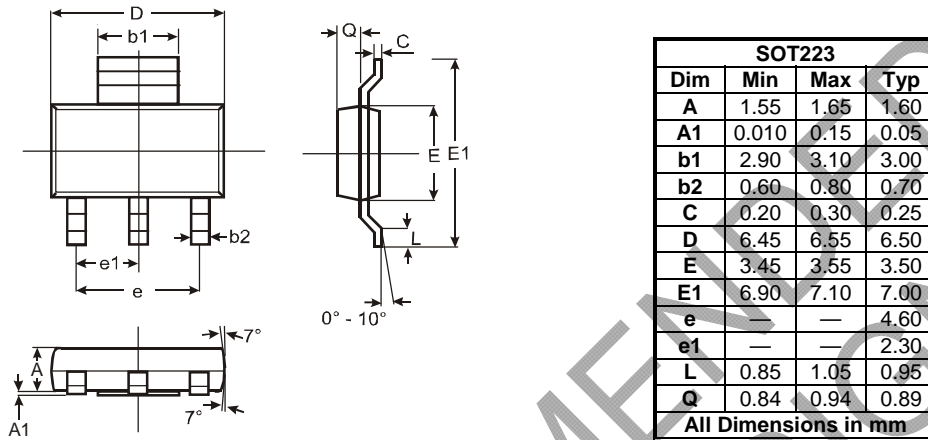
Notes: 7. Pulse Test: Pulse width ≤ 300μs. Duty cycle ≤ 2.0%.

NOT RECOMMENDED FOR NEW DESIGN



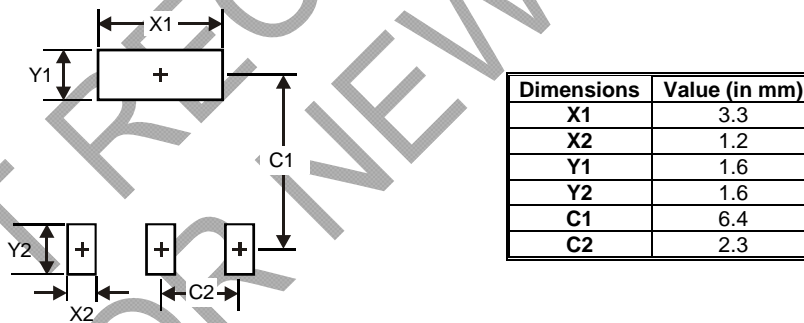
Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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