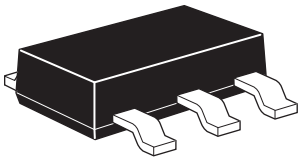
ZXTN5551G
160V, SOT223, NPN high voltage transistor

Summary



BV_{CEO} > 160V

BV_{EBO} > 6V

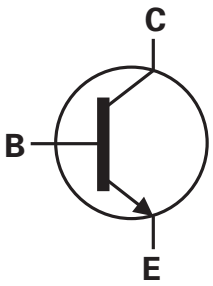
$I_{C(cont)}$ = 600mA

P_D = 2W

Complementary part number ZXTP5401G

Description

A high voltage NPN transistor in a high power dissipation surface mount package

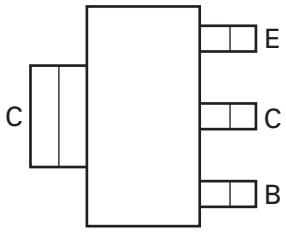


Features

- 160V rating
- SOT223 package

Applications

- High voltage amplification



Pinout - top view

Ordering information

Device	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTN5551GTA	7	12	1000
ZXTN5551GTC	13	12	4000

Device marking

ZXTN
5551

Absolute maximum ratings

Parameter	Symbol	Limit	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[a]	I_C	600	mA
Power dissipation at T_A = 25°C[a]	P_D	2	W
Linear derating factor		16	mW/°C
Operating and storage temperature range	T_j, T_{stg}	-55 to 150	°C

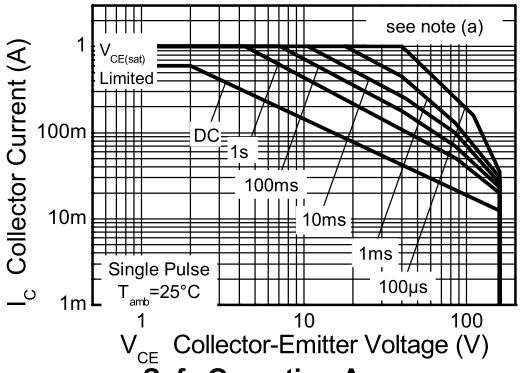
Thermal resistance

Parameter	Symbol	Value	Unit
Junction to ambient[a]	$R_{\Theta JA}$	62.5	°C/W

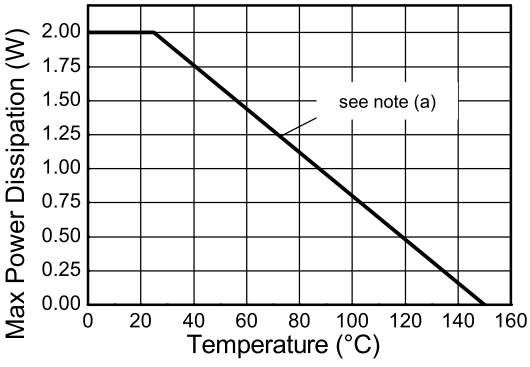
NOTES:

(a) For a device surface mounted on 50mm x 50mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

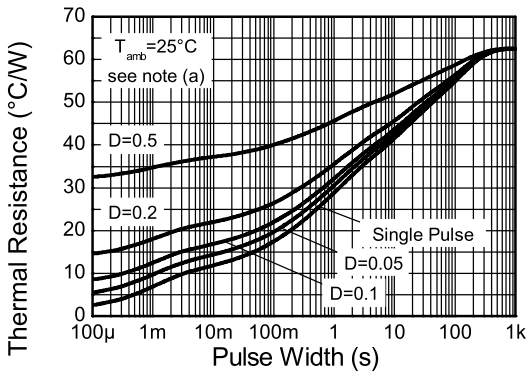
Characteristics



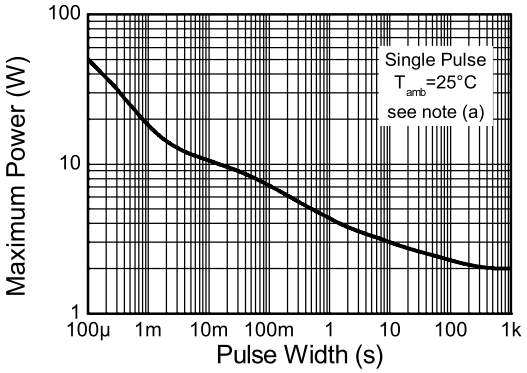
Safe Operating Area



Derating Curve



Transient Thermal Impedance



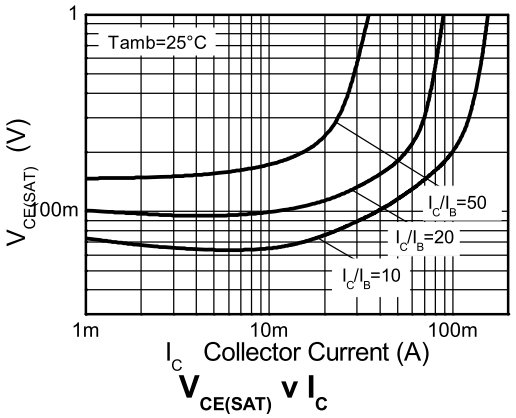
Pulse Power Dissipation

Electrical characteristics (at T_{amb} = 25°C unless otherwise stated).

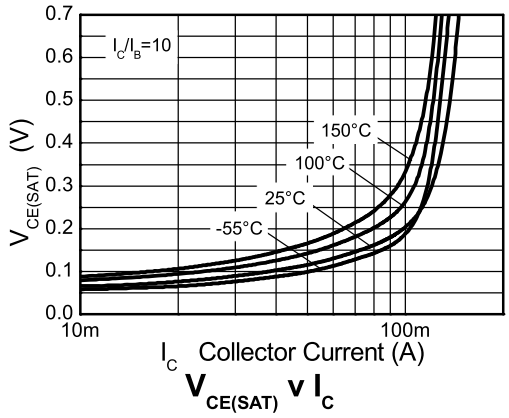
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	180	270		V	I_C = 100μA
Collector-emitter breakdown voltage (base open)	BV_{CEO}	160	200		V	I_C = 1mA (*)
Emitter-base breakdown voltage	BV_{EBO}	6	7.85		V	I_E = 10μA
Collector cut-off current	I_{CBO}		<1	50	nA	V_{CB} = 120V
				50	μA	V_{CB} = 120V, T_{amb}= 100°C
Collector-emitter saturation voltage	$V_{CE(Sat)}$		65	150	mV	I_C = 10mA, I_B = 1mA (*)
			115	200	mV	I_C = 50mA, I_B = 5mA (*)
Base-emitter saturation voltage	$V_{BE(Sat)}$		760	1000	mV	I_C = 10mA, I_B = 1mA (*)
			840	1200	mV	I_C = 50mA, I_B = 5mA (*)
Static forward current transfer ratio	h_{FE}	80	135			I_C = 1mA, V_{CE} = 5V (*)
		80	140	250		I_C = 10mA, V_{CE} = 5V (*)
		30	65			I_C = 50mA, V_{CE} = 5V (*)
Transition frequency	f_T		130		MHz	I_C = 10mA, V_{CE} = 10V f = 100MHz
Output capacitance	C_{OBO}			6	pF	V_{CB} = 10V, f = 1MHz (*)
Small signal	h_{FE}	50		260		I_C = 10mA, V_{CE} = 10V, f=1kHz (†)
Delay time	$t_{(d)}$		95		ns	V_{CC} = 10V. I_C = 10mA, I_{B1} = I_{B2}= 1mA
Rise time	$t_{(r)}$		64		ns	
Storage time	$t_{(s)}$		1256		ns	
Fall time	$t_{(f)}$		140		ns	

NOTES:
(*) Measured under pulsed conditions. Pulse width ≤300μs; duty cycle ≤2%.
(†) Periodic sample test only.

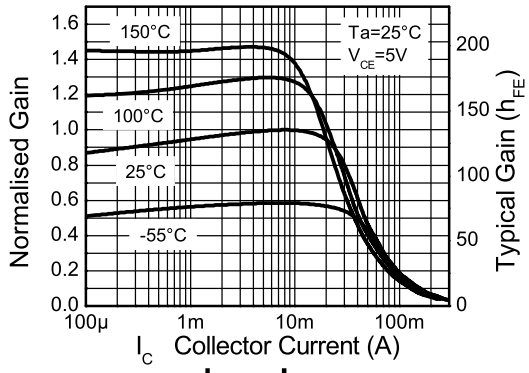
Typical Characteristics



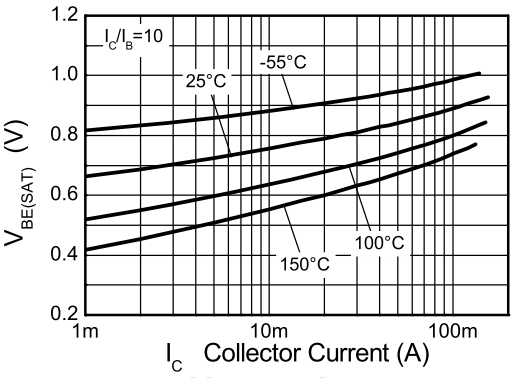
$V_{CE(SAT)}$ v I_C



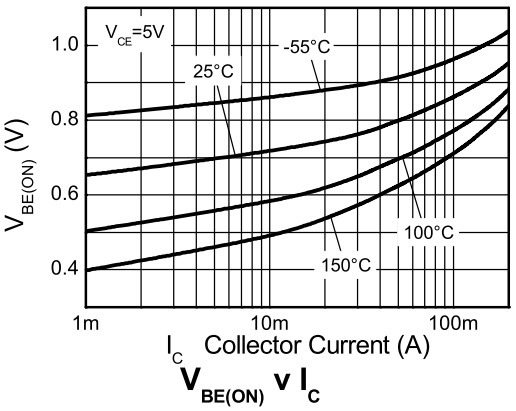
$V_{CE(SAT)}$ v I_C



h_{FE} v I_C



$V_{BE(SAT)}$ v I_C



$V_{BE(ON)}$ v I_C

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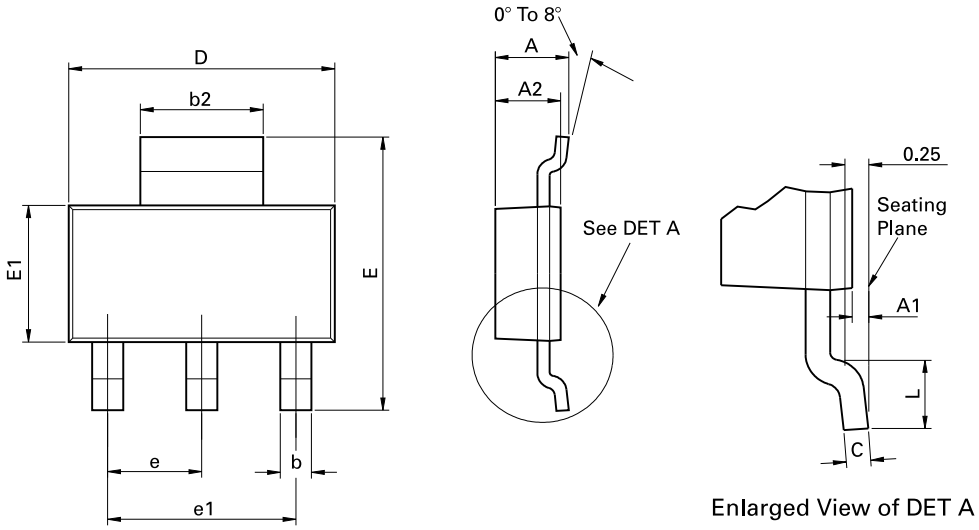
Package outline - SOT223



Conforms to JEDEC TO-261 AA Issue B

Dim.	Millimeters		Inches		Dim.	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	-	1.80	-	0.071	D	6.30	6.70	0.248	0.264
A1	0.02	0.10	0.0008	0.004	e	2.30 BSC		0.0905 BSC	
A2	1.55	1.65	0.0610	0.0649	e1	4.60 BSC		0.181 BSC	
b	0.66	0.84	0.026	0.033	E	6.70	7.30	0.264	0.287
b2	2.90	3.10	0.114	0.122	E1	3.30	3.70	0.130	0.146
C	0.23	0.33	0.009	0.013	L	0.90	-	0.355	-

Note: Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

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Zetex sales offices

Europe	Americas	Asia Pacific	Corporate Headquarters
Zetex GmbH Kustermann-park Balanstraße 59 D-81541 München Germany	Zetex Inc 700 Veterans Memorial Highway Hauppauge, NY 11788 USA	Zetex (Asia Ltd) 3701-04 Metroplaza Tower 1 Hing Fong Road, Kwai Fong Hong Kong	Zetex Semiconductors plc Zetex Technology Park, Chadderton Oldham, OL9 9LL United Kingdom
Telefon: (49) 89 45 49 49 0 Fax: (49) 89 45 49 49 49 europe.sales@zetex.com	Telephone: (1) 631 360 2222 Fax: (1) 631 360 8222 usa.sales@zetex.com	Telephone: (852) 26100 611 Fax: (852) 24250 494 asia.sales@zetex.com	Telephone: (44) 161 622 4444 Fax: (44) 161 622 4446 hq@zetex.com