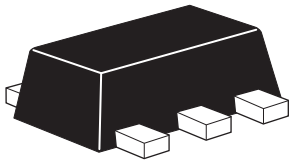
ZXTN5551Z
160V, SOT89, NPN high voltage transistor

Summary



BV_{CEO} > 160V

BV_{EBO} > 6V

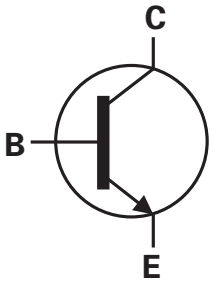
$I_{C(cont)}$ = 600mA

P_D = 1.2W

Complementary part number ZXTP5401Z

Description

A high voltage NPN transistor in a small outline surface mount package

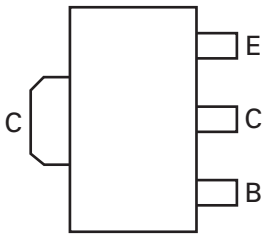


Features

- 160V rating
- SOT89 package

Applications

- High voltage amplification



Pinout - top view

Ordering information

Device	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTN5551ZTA	7	12	1000

Device marking

N51

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	1.2	W
Linear derating factor		9.6	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]	$R_{\Theta JA}$	104	°C/W

NOTES:

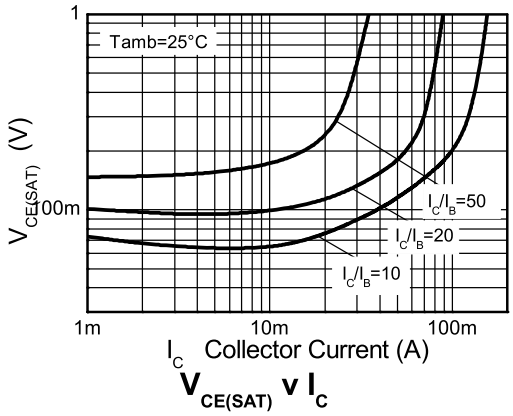
(a) For a device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

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

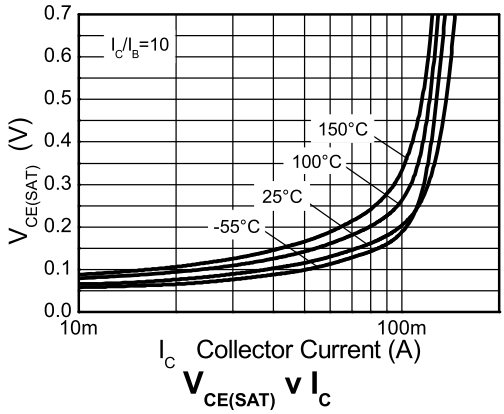
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	180	270		V	I_C = 100μA
Collector-emitter breakdown voltage (base open)	BV_{CEO}	160	200		V	I_C = 1mA (*)
Emitter-base breakdown voltage	BV_{EBO}	6	7.85		V	I_E = 10μA
Collector cut-off current	I_{CBO}		<1	50	nA	V_{CB} = 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	130			I_C = 1mA, V_{CE} = 5V(*)
		80	145	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 = 1omA, 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

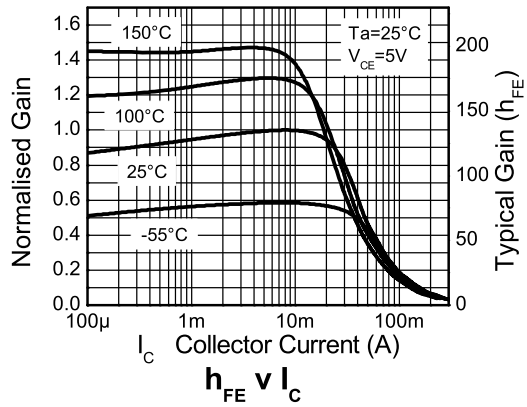
Typical characteristics



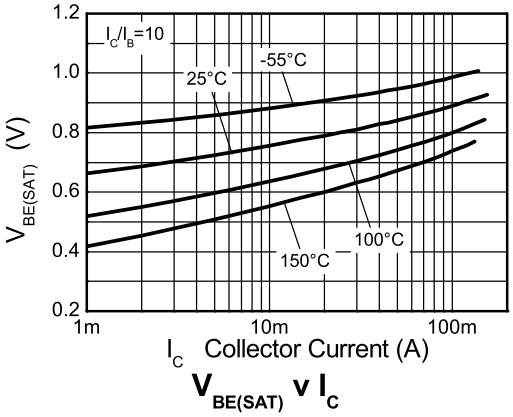
$V_{CE(SAT)}$ v I_C



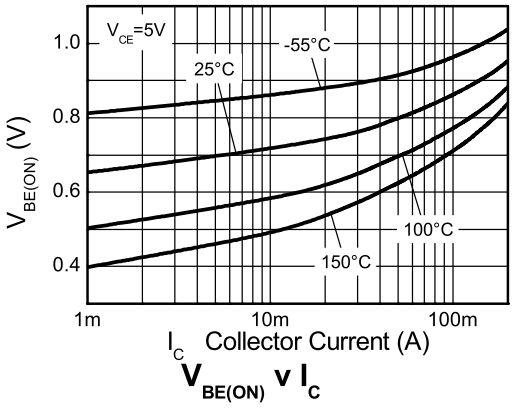
$V_{CE(SAT)}$ v I_C



h_{FE} v I_C



$V_{BE(SAT)}$ v I_C



$V_{BE(ON)}$ v I_C

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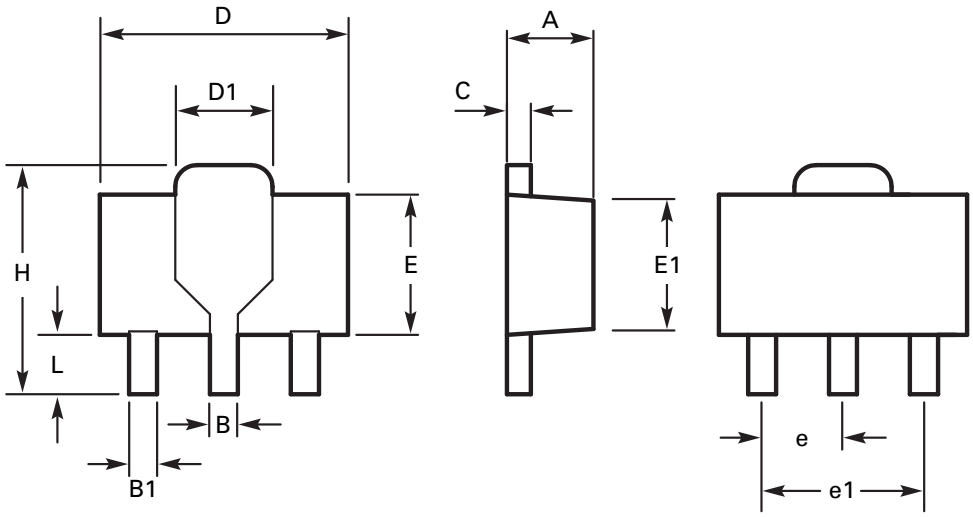
Package outline - SOT89



DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	1.40	1.60	0.550	0.630	E	2.29	2.60	0.090	0.102
B	0.44	0.56	0.017	0.022	E1	2.13	2.29	0.084	0.090
B1	0.36	0.48	0.014	0.019	e	1.50 BSC		0.059 BSC	
C	0.35	0.44	0.014	0.017	e1	3.00 BSC		0.118 BSC	
D	4.40	4.60	0.173	0.181	H	3.94	4.25	0.155	0.167
D1	1.52	1.83	0.064	0.072	L	0.89	1.20	0.035	0.047

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

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