Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

500V PNP HIGH PERFORMANCE TRANSISTOR IN SOT223

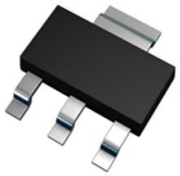
Features

- BV_{CEO} > -500V
- I_C = -150mA High Continuous Current
- I_{CM} = -500mA Peak Pulse Current
- **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**
- **An Automotive-Compliant Part is Available Under Separate Datasheet (ZXTP01500BGQ)**

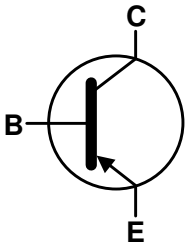
Mechanical Data

- Case: SOT223
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.112 grams (Approximate)

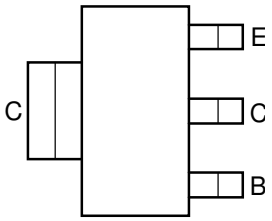
SOT223



Top View



Device Symbol



Top View
Pin-Out

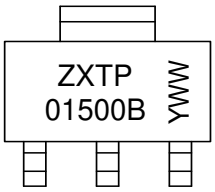
Ordering Information (Note 4)

Part Number	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
ZXTP01500BGTA	AEC-Q101	ZXTP 01500B	13	12	1,000
ZXTP01500BGTC	AEC-Q101	ZXTP 01500B	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/quality/lead_free.html 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 https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information

SOT223



ZXTP01500B = Product Type Marking Code
YWW = Date Code Marking
Y or $\overline{Y}$ = Last Digit of Year (ex: 7 = 2017)
WW or $\overline{WW}$ = Week Code (01 to 53)

Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-500	V
Collector-Emitter Voltage	V_{CEO}	-500	V
Emitter-Base Voltage	V_{EBO}	-7	V
Continuous Collector Current	I_C	-150	mA
Peak Pulse Current	I_{CM}	-500	mA

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

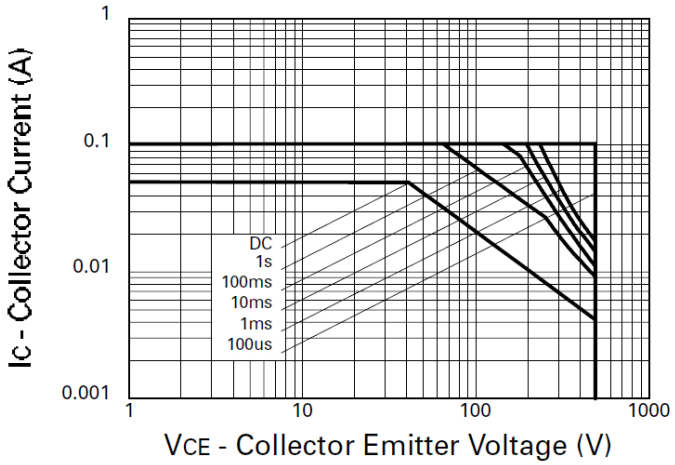
Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	2	W
	(Note 6)		3	W
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	62.5	°C/W
	(Note 6)		41.7	°C/W
Thermal Resistance, Junction to Leads	(Note 7)	$R_{\theta JL}$	14.8	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

ESD Ratings (Note 8)

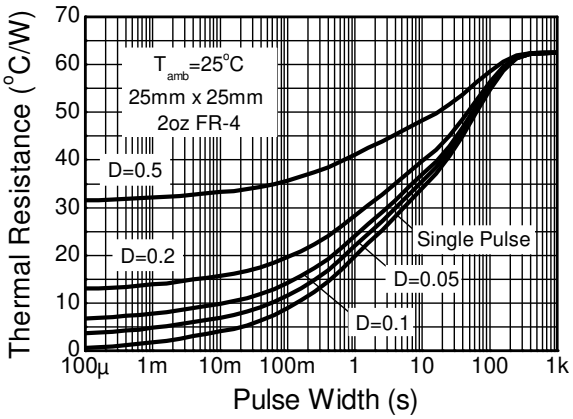
Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

Notes:
5. For a device mounted with the collector lead on 25mm x 25mm 2oz copper that is on a single-sided 1.6mm FR-4 PCB; device is measured under still air conditions whilst operating in steady-state.
6. Same as note (5), except the device is mounted on 50mm x 50mm 2oz copper.
7. Thermal resistance from junction to solder-point (at the end of the collector lead).
8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

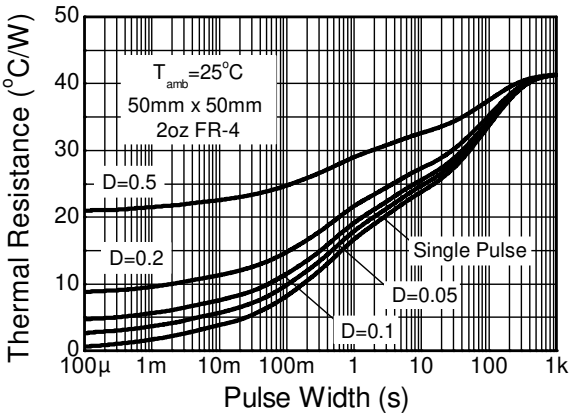
Thermal Characteristics and Derating Information



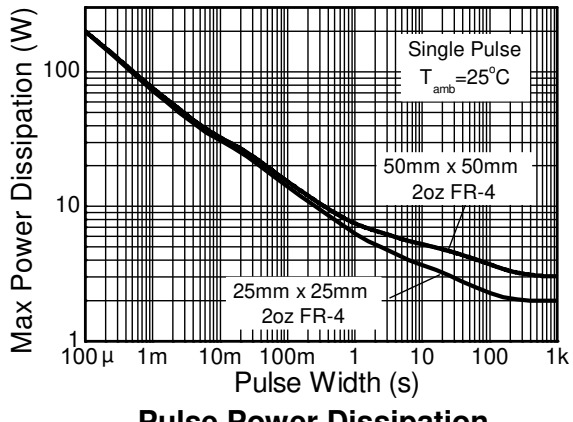
Safe Operating Area



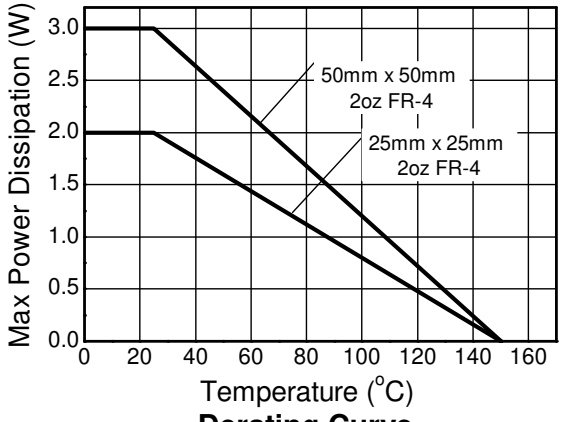
Transient Thermal Impedance



Transient Thermal Impedance



Pulse Power Dissipation



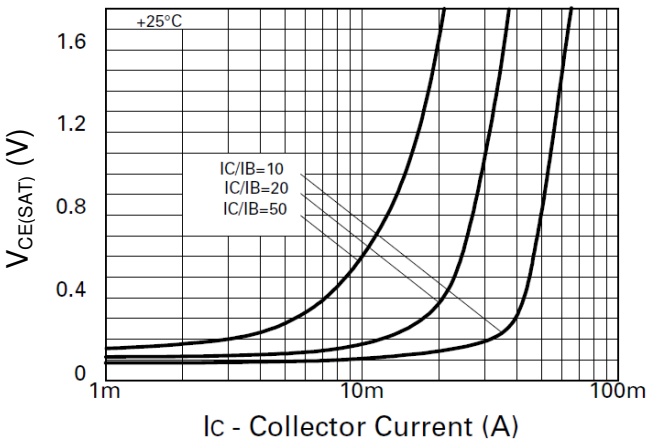
Derating Curve

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

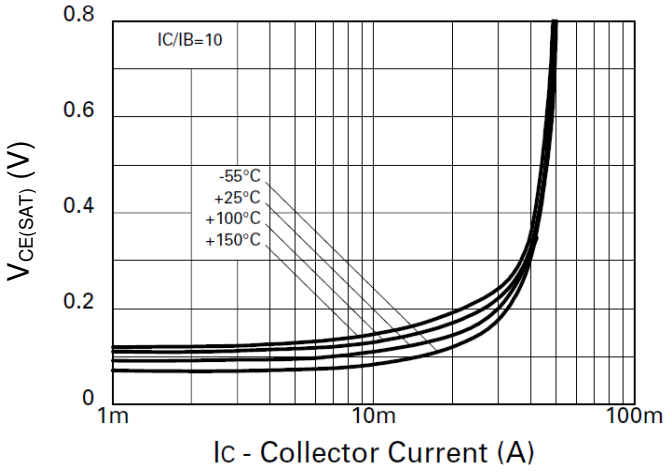
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-500	—	—	V	I_C = -100µA
Collector-Emitter Breakdown Voltage (Note 9)	BV_{CEO}	-500	—	—	V	I_C = -1mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-7	—	—	V	I_E = -100µA
Collector Cut-off Current	I_{CBO}	—	—	-100	nA	V_{CB} = -500V
Collector Cut-off Current	I_{CES}	—	—	-100	nA	V_{CE} = -500V
Emitter Cut-off Current	I_{EBO}	—	—	-100	nA	V_{EB} = -5.6V
Collector-Emitter Saturation Voltage (Note 9)	$V_{CE(SAT)}$	—	—	-200	mV	I_C = -20mA, I_B = -2mA
		—	—	-500		I_C = -50mA, I_B = -10mA
Base-Emitter Saturation Voltage (Note 9)	$V_{BE(SAT)}$	—	—	-900	mV	I_C = -50mA, I_B = -10mA
Base-Emitter Turn-On Voltage (Note 9)	$V_{BE(ON)}$	—	—	-900	mV	I_C = -50mA, V_{CE} = -10V
DC Current Gain (Note 9)	h_{FE}	100	—	300	—	I_C = -1mA, V_{CE} = -10V
		80	—	300		I_C = -50mA, V_{CE} = -10V
		—	15	—		I_C = -100mA, V_{CE} = -10V
Current Gain-Bandwidth Product	f_T	60	—	—	MHz	V_{CE} = -20V, I_C = -10mA f = 50MHz
Turn-On Time	t_{ON}	—	110	—	ns	V_{CC} = -100V, I_C = -50mA
Turn-Off Time	t_{OFF}	—	1.5	—	µs	I_{B1} = -5mA, I_{B2} = 10mA
Output Capacitance	C_{OBO}	—	—	8	pF	V_{CB} = -20V, f = 1MHz

Note: 9. Measured under pulsed conditions. Pulse width ≤ 300µs. Duty cycle ≤ 2%.

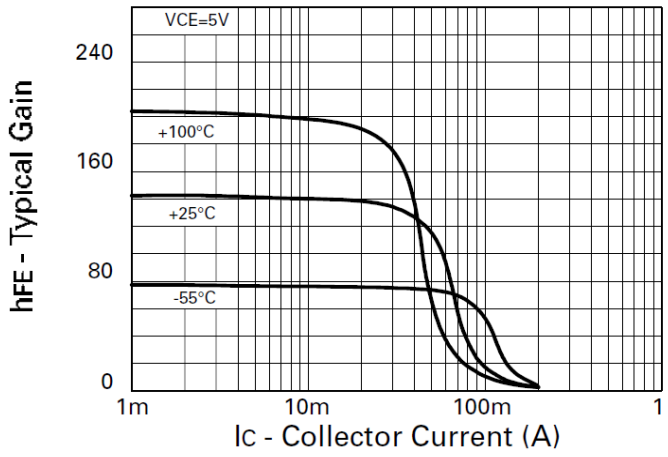
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)



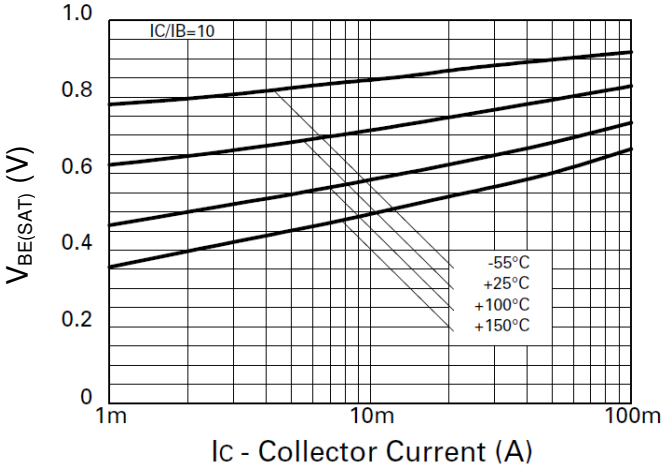
$V_{CE(SAT)}$ v I_C



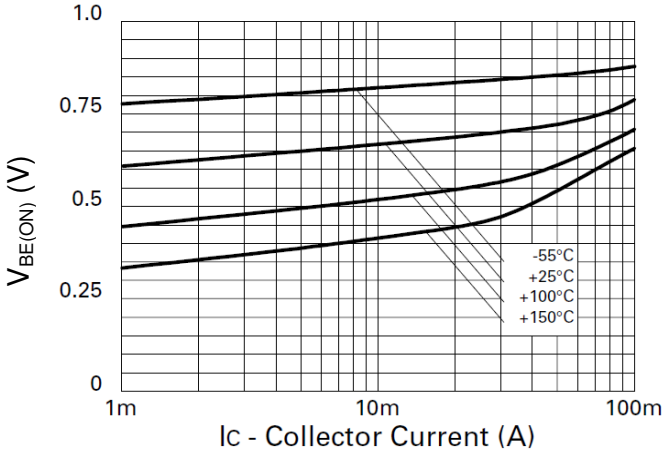
$V_{CE(SAT)}$ v I_C



hFE v IC



$V_{BE(SAT)}$ v I_C

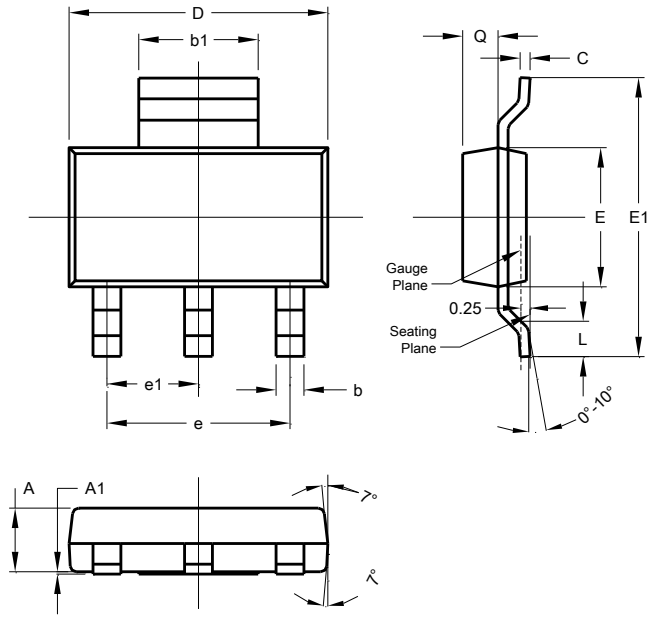


$V_{BE(ON)}$ v I_C

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT223

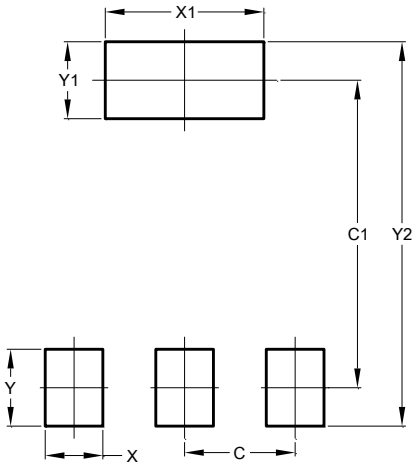


SOT223			
Dim	**Min**	**Max**	**Typ**
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b	0.60	0.80	0.70
b1	2.90	3.10	3.00
C	0.20	0.30	0.25
D	6.45	6.55	6.50
E	3.45	3.55	3.50
E1	6.90	7.10	7.00
e	-	-	4.60
e1	-	-	2.30
L	0.85	1.05	0.95
Q	0.84	0.94	0.89
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT223



Dimensions	Value (in mm)
C	2.30
C1	6.40
X	1.20
X1	3.30
Y	1.60
Y1	1.60
Y2	8.00

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device Terminals and PCB tracking.

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2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

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