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[Diodes Incorporated](#)
[ZXTP5401FLTA](#)

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150V PNP SILICON PLANAR HIGH VOLTAGE TRANSISTOR IN SOT23

Features and Benefits

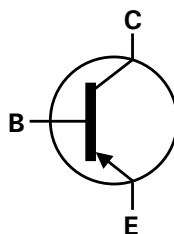
- $BV_{CEO} > -150V$
- Maximum Continuous Collector Current $I_C = -600mA$
- Excellent h_{FE} Characteristics up to $I_C = -50mA$
- Low Saturation Voltages
- Complementary part number ZXTN5551FL
- **Totally Lead-Free & Fully RoHS compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

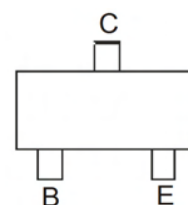
- Case: SOT23
- UL Flammability Rating 94V-0
- Case material: molded Plastic.
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish; Solderable per MIL-STD-202, Method 208 
- Weight: 0.008 grams (Approximate)



Top View



Device Symbol



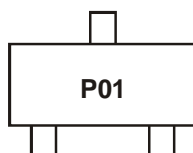
Top View
Pin-Out

Ordering Information (Note 4)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTP5401FLTA	P01	7	8	3,000

- 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



P01 = Product Type Marking Code

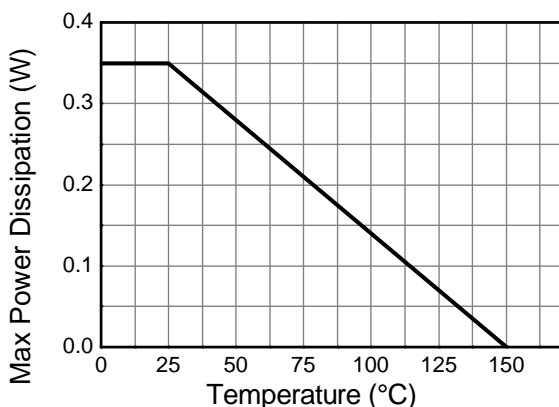
Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-160	V
Collector-Emitter Voltage	V _{CEO}	-150	V
Emitter-Base Voltage	V _{EBO}	-5	V
Continuous Collector Current	I _C	-600	mA
Peak Pulse Current	I _{CM}	-1	A

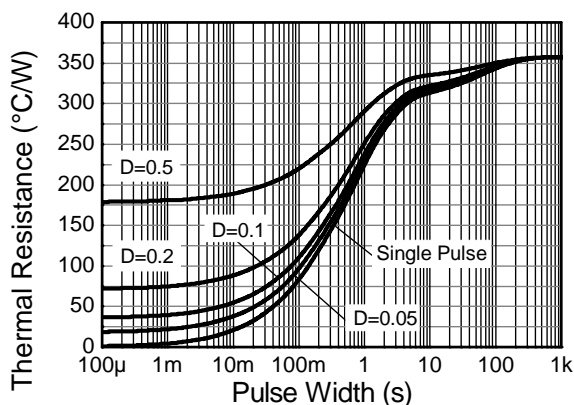
Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector Power Dissipation	P _D	(Note 5)	310
		(Note 6)	350
Thermal Resistance, Junction to Ambient	R _{θJA}	(Note 5)	403
		(Note 6)	357
Thermal Resistance, Junction to Leads	R _{θJL}	350	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

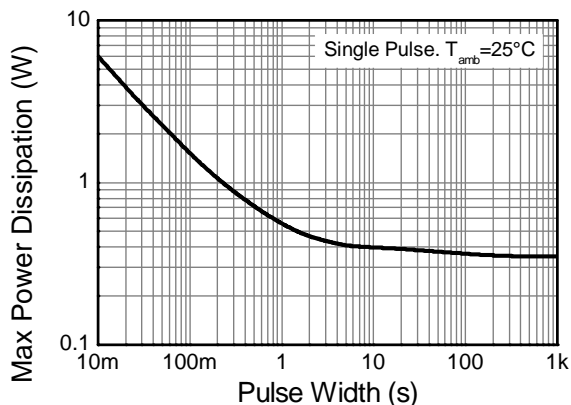
Notes: 5. For the device mounted on minimum recommended pad layout FR4 PCB with high coverage of single sided 1oz copper in still air condition;
 6. Same as Note 5, except the device is mounted on 15mm X 15mm X 1.6mm FR4 PCB
 7. Thermal resistance from junction to solder-point (at the end of the collector lead).



Derating Curve



Transient Thermal Impedance



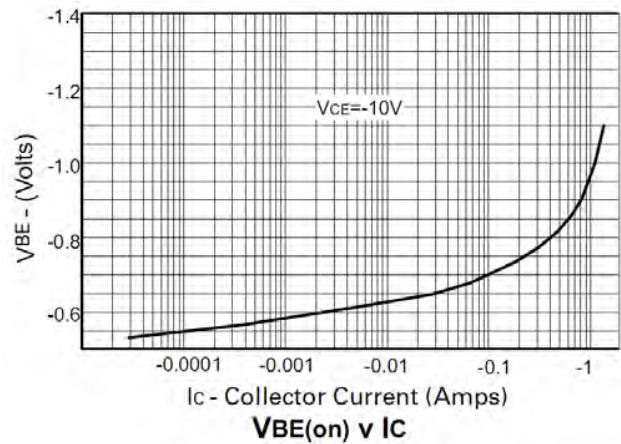
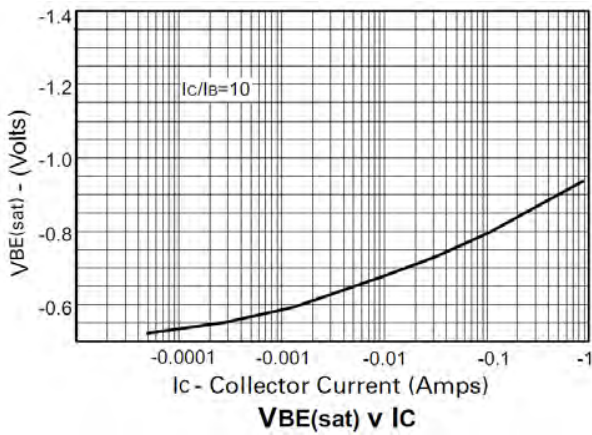
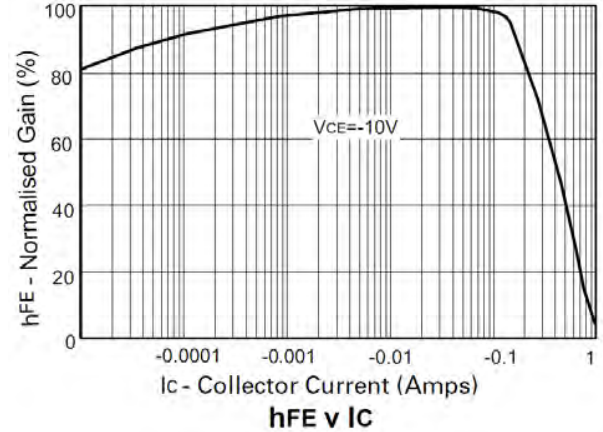
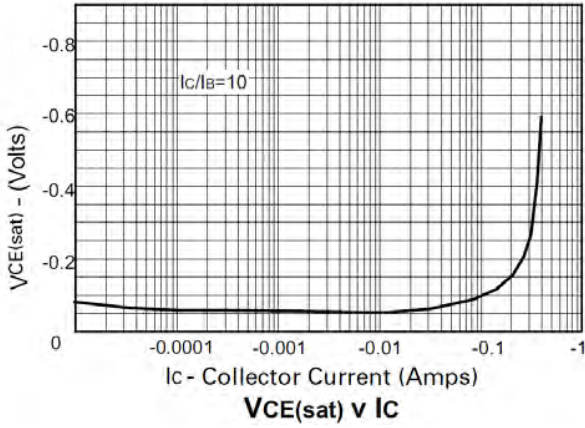
Pulse Power Dissipation

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

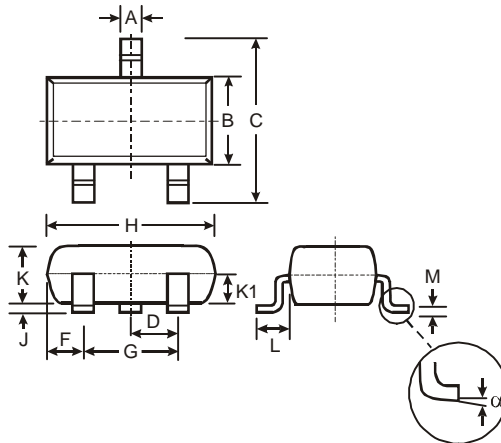
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-160	-270	-	V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage (Note 8)	BV_{CEO}	-150	-240	-	V	$I_C = -1\text{mA}$
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	-8.1	-	V	$I_E = -100\mu\text{A}$
Collector Cutoff Current	I_{CBO}	-	< -1 -	-50 -50	nA μA	$V_{CB} = -120\text{V}$ $V_{CB} = -120\text{V}, T_{amb} = 100^\circ\text{C}$
Static Forward Current Transfer Ratio (Note 8)	h_{FE}	50 60 50	135 135 130	- 240 -	-	$I_C = -1\text{mA}, V_{CE} = -5\text{V}$ $I_C = -10\text{mA}, V_{CE} = -5\text{V}$ $I_C = -50\text{mA}, V_{CE} = -5\text{V}$
Collector-Emitter Saturation Voltage (Note 8)	$V_{CE(sat)}$	- -	-50 -70	-200 -500	mV	$I_C = -10\text{mA}, I_B = -1\text{mA}$ $I_C = -50\text{mA}, I_B = -5\text{mA}$
Base-Emitter Saturation Voltage (Note 8)	$V_{BE(sat)}$	-	-700 -750	-1000 -1000	mV	$I_C = -10\text{mA}, I_B = -1\text{mA}$ $I_C = -50\text{mA}, I_B = -5\text{mA}$
Output Capacitance	C_{obo}	-	-	10	pF	$V_{CB} = -10\text{V}, f = 1\text{MHz}$
Transition Frequency	f_T	-	100	-	MHz	$V_{CE} = -10\text{V}, I_C = -10\text{mA}, f = 100\text{MHz}$
Delay Time	$t_{(d)}$	-	386	-	ns	$V_{CC} = -50\text{V}, I_C = -100\text{mA}, I_{B1} = I_{B2} = -10\text{mA}$
Rise Time	$t_{(r)}$	-	202	-	ns	
Storage Time	$t_{(s)}$	-	1720	-	ns	
Fall Time	$t_{(f)}$	-	275	-	ns	

 Notes: 8. Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$. Duty cycle $\leq 2\%$

Typical Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

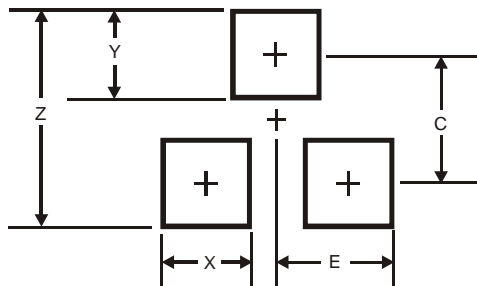


Package Outline Dimensions



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35



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