





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

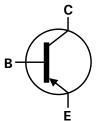
Mechanical Data

- 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)

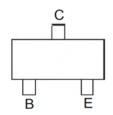
SOT23







Device Symbol



Top View Pin-Out

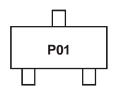
Ordering Information (Note 4)

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 _{CBO}	-160	V
Collector-Emitter Voltage	V _{CEO}	-150	V
Emitter-Base Voltage	V _{EBO}	-5	V
Continuous Collector Current	Ic	-600	mA
Peak Pulse Current	I _{CM}	-1	Α

Thermal Characteristics @TA = 25°C unless otherwise specified

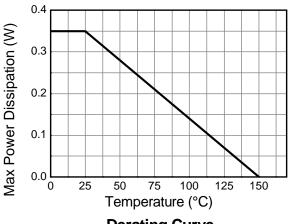
Characteristic		Symbol	Value	Unit	
Collector Power Dissipation	(Note 5)	D.	310	mW	
Collector Power Dissipation	(Note 6)	P _D	350		
Thormal Desigtance Junction to Ambient	(Note 5)	0	403	°C/W	
Thermal Resistance, Junction to Ambient	(Note 6)	R _{0JA}	357	-C/vv	
Thermal Resistance, Junction to Leads	(Note 7)	$R_{ heta JL}$	350	°C/W	
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to +150	°C	

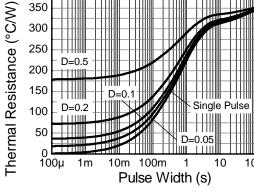
Notes:

5. For the device mounted on minimum recommended pad layout FR4 PCB with high coverage of single sided 1oz copper in still air condition;

400

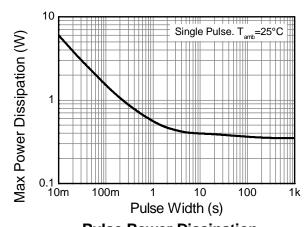
- 6. Same as Note 5, expect the device is mounted on 15mm X 15mm X 1.6mm FR4 PCB
- 7. Thermal resistance from junction to solder-point (at the end of the collector lead).





Derating Curve





Pulse Power Dissipation





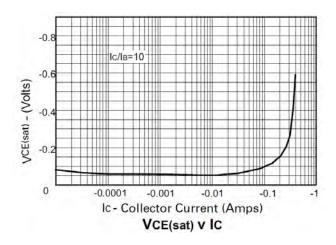
Electrical Characteristics @T_A = 25°C unless otherwise specified

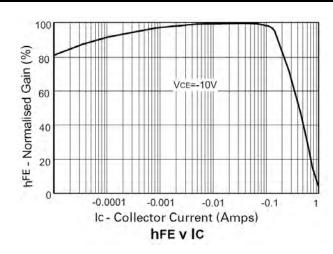
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-160	-270	-	V	$I_C = -100 \mu A$
Collector-Emitter Breakdown Voltage (Note 8)	BV _{CEO}	-150	-240	-	V	$I_C = -1 \text{mA}$
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	-8.1	-	V	$I_E = -100 \mu A$
Collector Cutoff Current	I _{CBO}	-	< -1 -	-50 -50	nΑ μΑ	V _{CB} = -120V V _{CB} = -120V, T _{amb} = 100°C
Static Forward Current Transfer Ratio (Note 8)	h _{FE}	50 60 50	135 135 130	- 240 -	-	$I_C = -1mA$, $V_{CE} = -5V$ $I_C = -10mA$, $V_{CE} = -5V$ $I_C = -50mA$, $V_{CE} = -5V$
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	$V_{CB} = -10V$, $f = 1MHz$
Transition Frequency	f⊤	-	100	-	MHz	$V_{CE} = -10V, I_{C} = -10mA,$ f = 100MHz
Delay Time	t _(d)	-	386	-	ns	
Rise Time	t _(r)	-	202	-	ns	$V_{CC} = -50V, I_{C} = -100mA,$
Storage Time	t _(S)	-	1720	-	ns	$I_{B1} = I_{B2} = -10 \text{mA}$
Fall Time	t _(f)	-	275	-	ns	

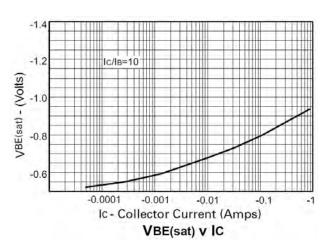
Notes: 8. Measured under pulsed conditions. Pulse width \leq 300 μ s. Duty cycle \leq 2%

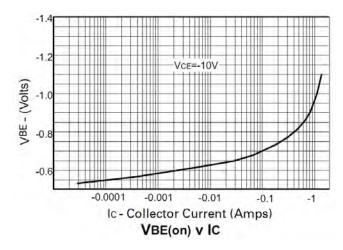


Typical Electrical Characteristics @T_A = 25°C unless otherwise specified



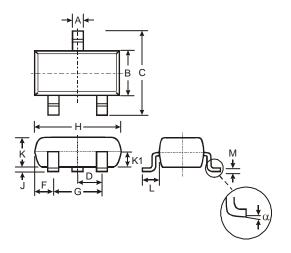






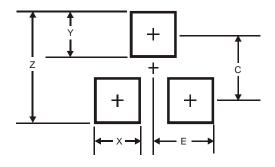


Package Outline Dimensions



SOT23					
Dim	Min	Max	Тур		
Α	0.37	0.51	0.40		
В	1.20	1.40	1.30		
С	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		
Н	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	All Dimensions in mm				

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	8.0
Υ	0.9
С	2.0
F	1.35





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