150V PNP SILICON PLANAR HIGH VOLTAGE TRANSISTOR IN SOT23

Features and Benefits

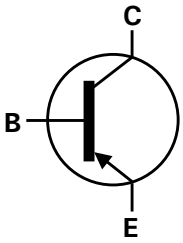
- BV_{CEO} > -150V
- Maximum Continuous Collector Current I_C = -600mA
- Excellent h_{FE} Characteristics up to I_C = -50mA
- Low Saturation Voltages
- Complementary part number ZXTN5551FL
- **Totally Lead-Free & Fully RoHS compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note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

Mechanical Data

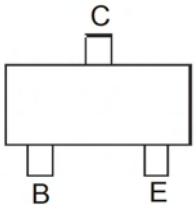
- Case: SOT23
- UL Flammability Rating 94V-0
- Case material: molded Plastic.
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish; Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.008 grams (Approximate)

SOT23

Top View



Device Symbol



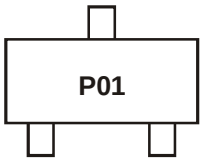
Top View
Pin-Out

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

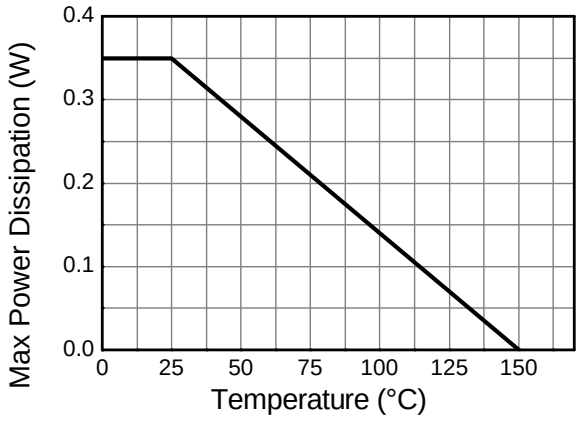
Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-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

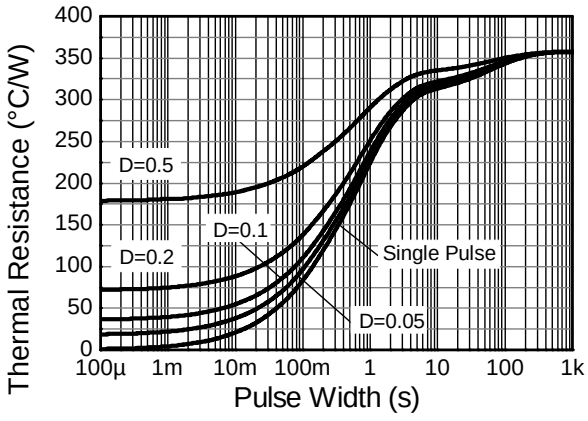
Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Collector Power Dissipation	(Note 5)	P_D	310	mW
	(Note 6)		350	
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	403	°C/W
	(Note 6)		357	
Thermal Resistance, Junction to Leads	(Note 7)	$R_{\theta JL}$	350	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

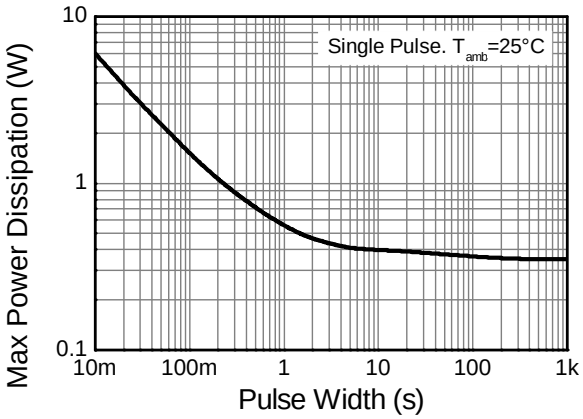
Notes: 5. For the device mounted on minimum recommended pad layout FR4 PCB with high coverage of single sided 1oz copper in still air condition;
6. Same as Note 5, expect the device is mounted on 15mm X 15mm X 1.6mm FR4 PCB
7. Thermal resistance from junction to solder-point (at the end of the collector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



Derating Curve



Transient Thermal Impedance



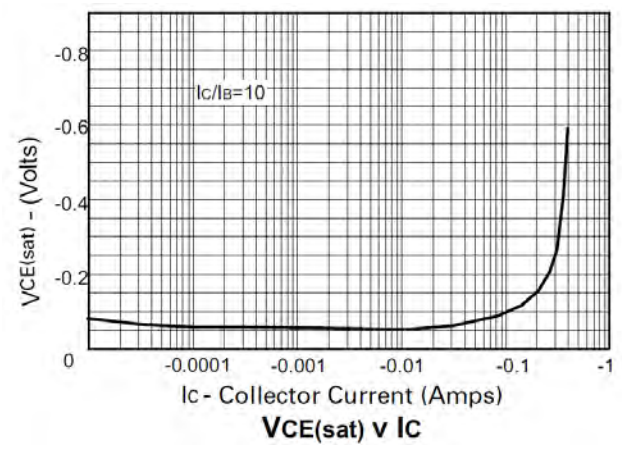
Pulse Power Dissipation

Electrical Characteristics @T_A = 25°C unless otherwise specified

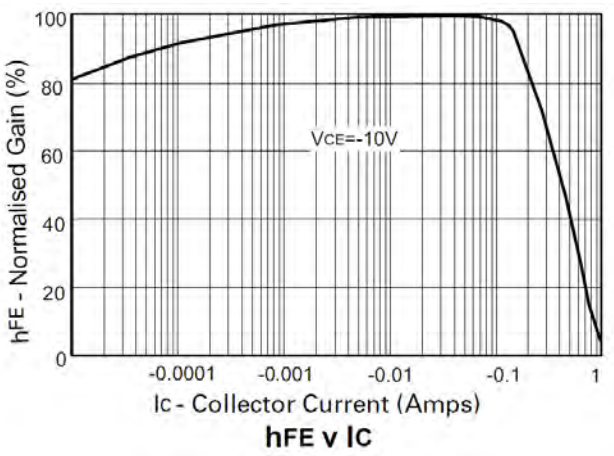
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-160	-270	-	V	I_C = -100µA
Collector-Emitter Breakdown Voltage (Note 8)	BV_{CEO}	-150	-240	-	V	I_C = -1mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	-8.1	-	V	I_E = -100µA
Collector Cutoff Current	I_{CBO}	-	< -1 -	-50 -50	nA µA	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 = - 10mA, I_B = -1mA I_C = - 50mA, I_B = -5mA
Base-Emitter Saturation Voltage (Note 8)	$V_{BE(sat)}$	-	-700 -750	-1000 -1000	mV	I_C = -10mA, I_B = -1mA I_C = -50mA, I_B = -5mA
Output Capacitance	C_{obo}	-	-	10	pF	V_{CB} = -10V, f = 1MHz
Transition Frequency	f_T	-	100	-	MHz	V_{CE} = -10V, I_C = -10mA, f = 100MHz
Delay Time	$t_{(d)}$	-	386	-	ns	V_{CC} = -50V, I_C = -100mA, I_{B1} = I_{B2} = -10mA
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 ≤ 300 µs. Duty cycle ≤ 2%

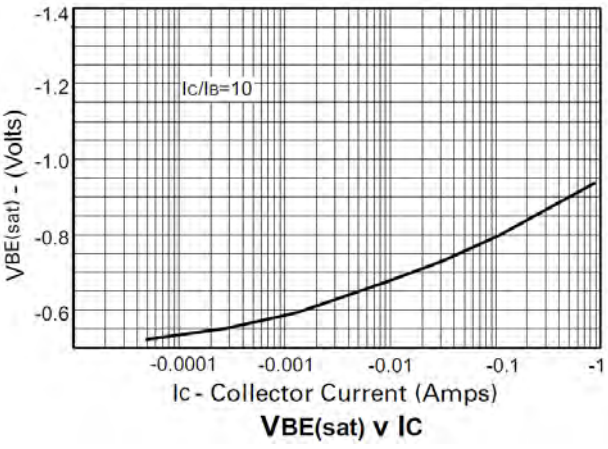
Typical Electrical Characteristics @T_A = 25°C unless otherwise specified



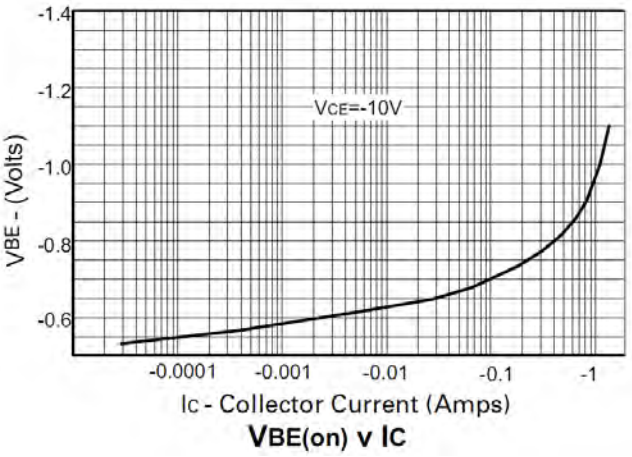
VCE(sat) v IC



hFE v IC

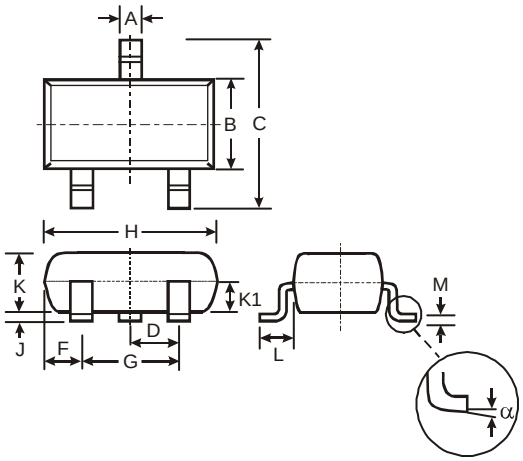


VBE(sat) v IC



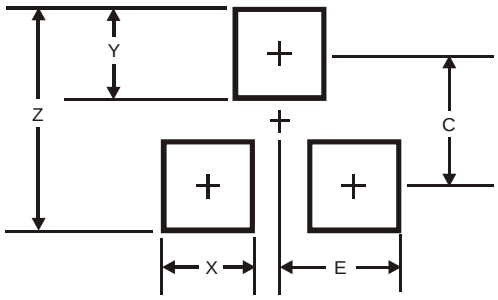
VBE(on) v IC

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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