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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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60V PNP MEDIUM POWER LOW SATURATION TRANSISTOR IN SOT223

Features

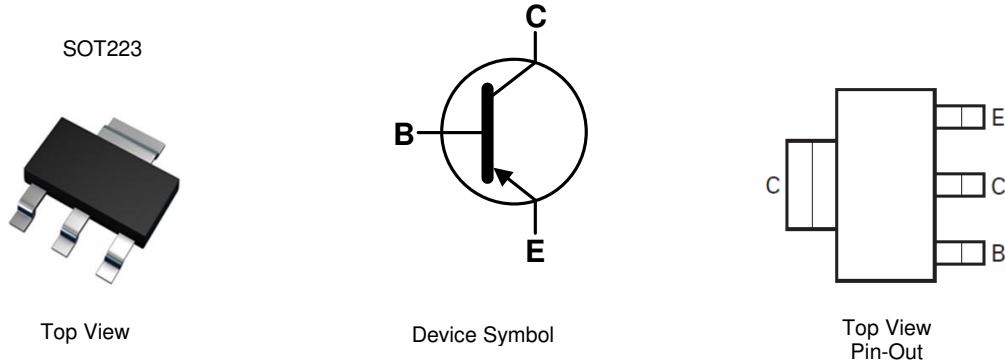
- $BV_{CEO} > -60V$
- $I_C = -5.5A$ High Continuous Collector Current
- $I_{CM} = -15A$ Peak Pulse Current
- Low Saturation Voltage $V_{CE(sat)} < -70mV @ -1A$
- $R_{SAT} = 39m\Omega$ for a Low Equivalent On-Resistance
- h_{FE} Specified Up to $-10A$ for a High Gain Hold Up
- Complementary NPN Type: ZX5T851G
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

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)

Applications

- DC-DC Converters
- MOSFET & IGBT Gate Drivers
- Charging Circuits
- Power Switches
- Motor Control

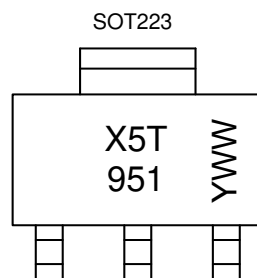


Ordering Information (Note 4)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZX5T951GTA	X5T951	7	12	1,000
ZX5T951GTC	X5T951	13	12	4,000

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 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



X5T 951 = Product Type Marking Code
 YWW = Date Code Marking
 Y or \bar{Y} = Last Digit of Year (ex: 5= 2015)
 WW or $\bar{W}W$ = Week Code (01~53)

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-100	V
Collector-Emitter Voltage	V _{CEO}	-60	V
Emitter-Base Voltage	V _{EBO}	-7	V
Continuous Collector Current	I _C	-5.5	A
Peak Pulse Current	I _{CM}	-15	A

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

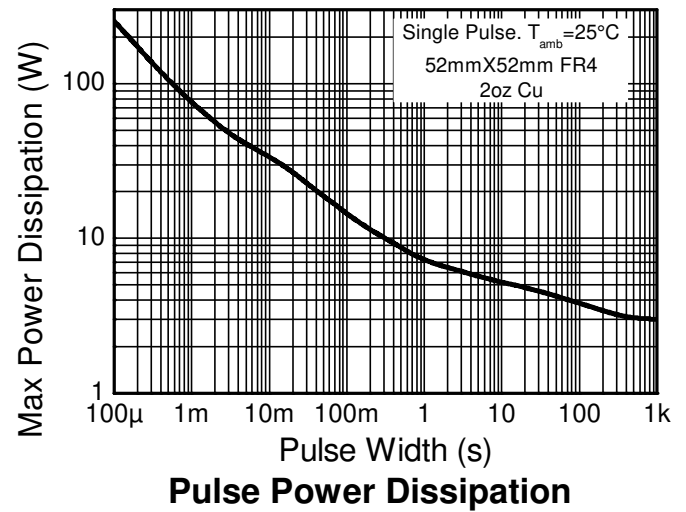
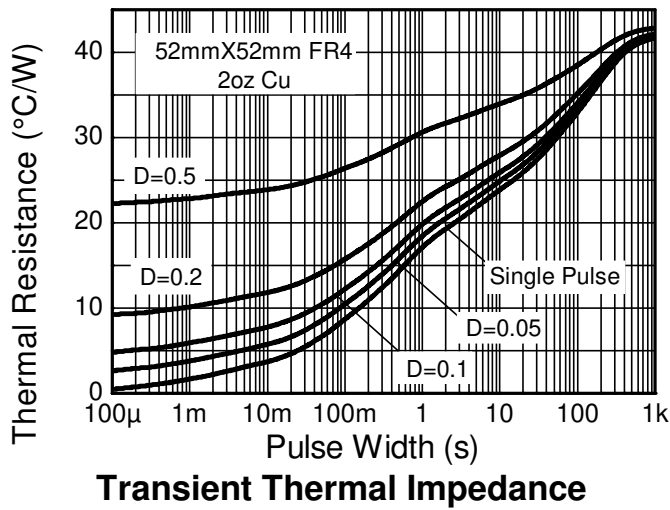
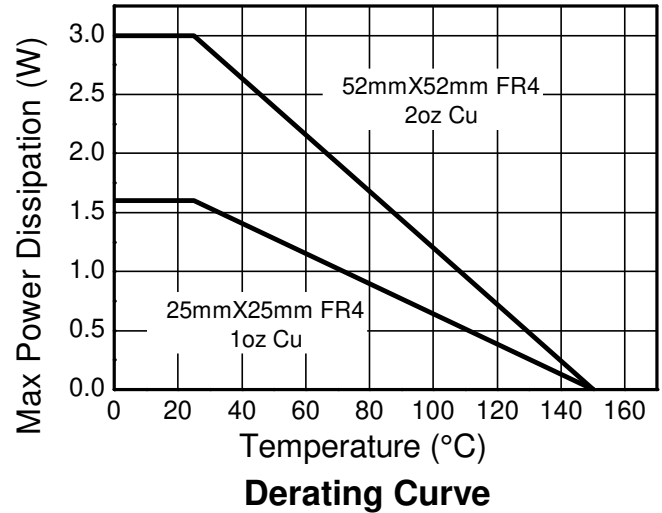
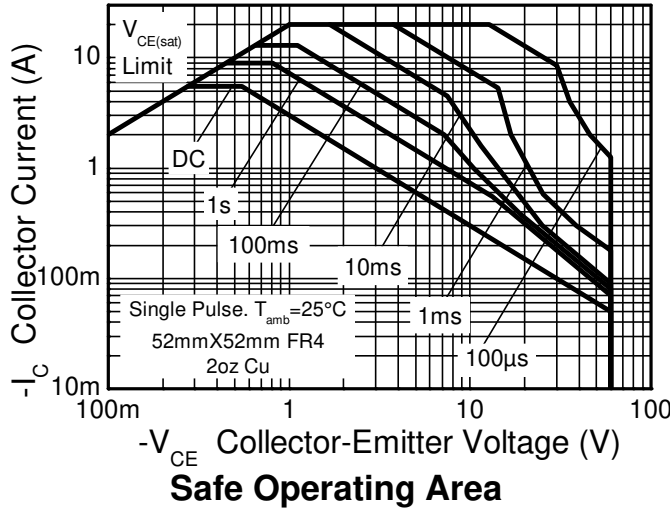
Characteristic	Symbol	Value	Unit
Power Dissipation	P _D	3.0	W
		24	
Linear Derating Factor		1.6	mW /°C
		12.8	
Thermal Resistance, Junction to Ambient	R _{θJA} (Note 5)	42	°C/W
	R _{θJA} (Note 6)	78	
Thermal Resistance Junction to Lead	R _{θJL} (Note 7)	10.48	
Operating and Storage Temperature Range	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 surface mounted on 52mm x 52mm x 1.6mm FR4 PCB with high coverage of single sided 2oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
 6. Same as Note (5), except the device is surface mounted on 25mm x 25mm with 1oz 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

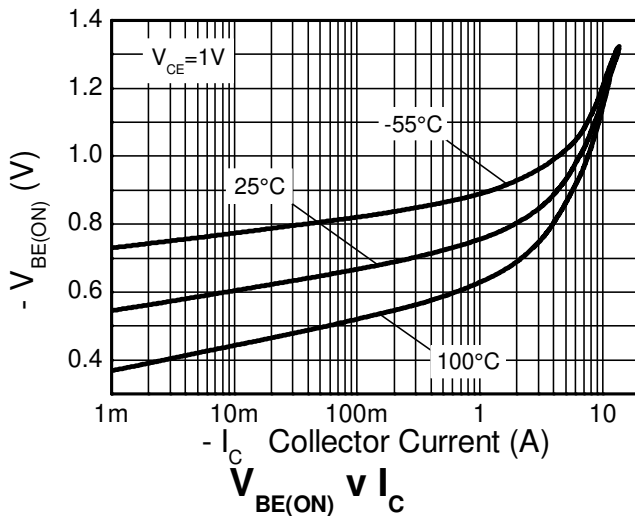
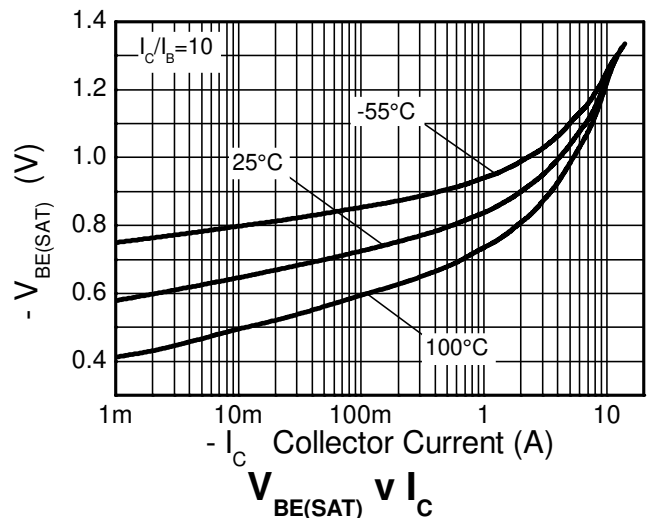
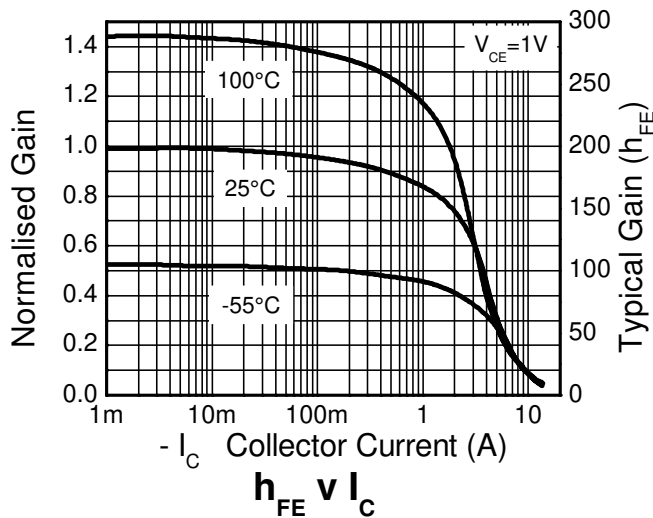
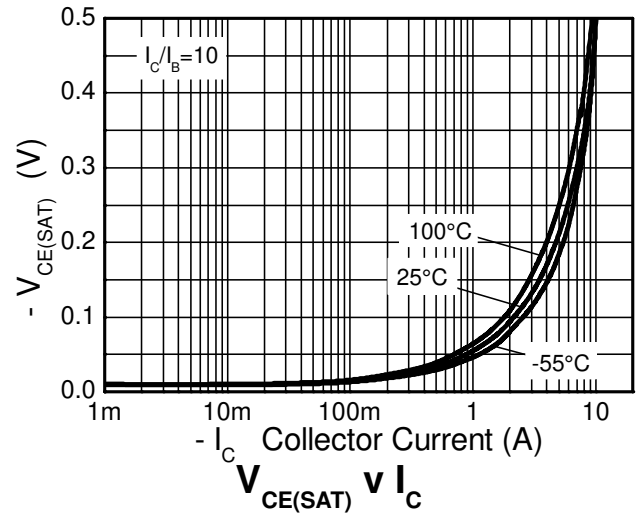
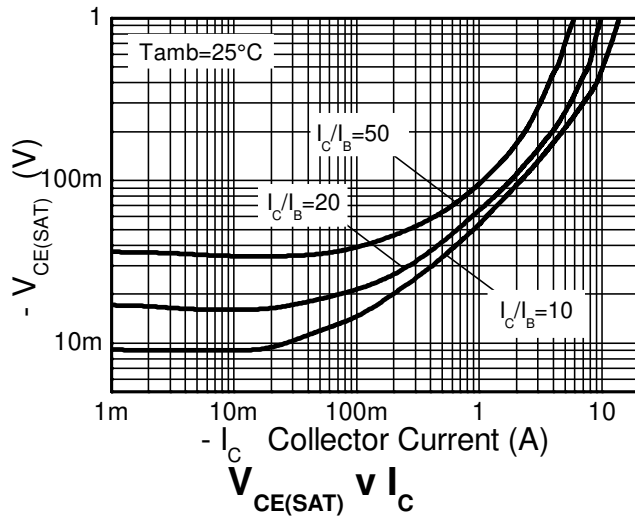


Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-100	-120	-	V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	BV_{CER}	-100	-120	-	V	$I_C = -1\mu\text{A}$, $R_B \leq 1\text{k}\Omega$
Collector-Emitter Breakdown Voltage (Note 9)	BV_{CEO}	-60	-80	-	V	$I_C = -10\text{mA}$
Emitter-Base Breakdown Voltage	BV_{EBO}	-7	-8.1	-	V	$I_E = -100\mu\text{A}$
Collector-Base Cutoff Current	I_{CBO}	-	<1	-20	nA	$V_{CB} = -80\text{V}$
				-0.5	μA	$V_{CB} = -80\text{V}$, $T_A = +100^\circ\text{C}$
Collector-Emitter Cutoff Current	I_{CER} $R \leq 1\text{k}\Omega$	-	<1	-20	nA	$V_{CB} = -80\text{V}$
				-0.5	μA	$V_{CB} = -80\text{V}$, $T_A = +100^\circ\text{C}$
Emitter Cutoff Current	I_{EBO}	-	<1	-10	nA	$V_{EB} = -6\text{V}$
Static Forward Current Transfer Ratio (Note 9)	h_{FE}	100	250	-	-	$I_C = -10\text{mA}$, $V_{CE} = -1\text{V}$
		100	200	300		$I_C = -2\text{A}$, $V_{CE} = -1\text{V}$
		45	90	-		$I_C = -5\text{A}$, $V_{CE} = -1\text{V}$
		10	25	-		$I_C = -10\text{A}$, $V_{CE} = -1\text{V}$
Collector-Emitter Saturation Voltage (Note 9)	$V_{CE(sat)}$	-	-15	-25	mV	$I_C = -100\text{mA}$, $I_B = -10\text{mA}$
		-	-55	-70		$I_C = -1\text{A}$, $I_B = -100\text{mA}$
		-	-90	-120		$I_C = -2\text{A}$, $I_B = -200\text{mA}$
		-	-195	-250		$I_C = -5\text{A}$, $I_B = -500\text{mA}$
Base-Emitter Saturation Voltage (Note 9)	$V_{BE(sat)}$	-	-1,030	-1,150	mV	$I_C = -5\text{A}$, $I_B = -500\text{mA}$
Base-Emitter Turn-On Voltage (Note 9)	$V_{BE(on)}$	-	-920	-1,020	mV	$I_C = -5\text{A}$, $V_{CE} = -1\text{V}$
Output Capacitance (Note 9)	C_{obo}	-	48	-	pF	$V_{CB} = -10\text{V}$, $f = 1\text{MHz}$
Transition Frequency	f_T	-	120	-	MHz	$V_{CE} = -10\text{V}$, $I_C = -100\text{mA}$ $f = 50\text{MHz}$
Switching Time	t_{on}	-	39	-	ns	$V_{CC} = -10\text{V}$, $I_C = -1\text{A}$ $I_{B1} = -I_{B2} = -100\text{mA}$
	t_{off}	-	370	-		

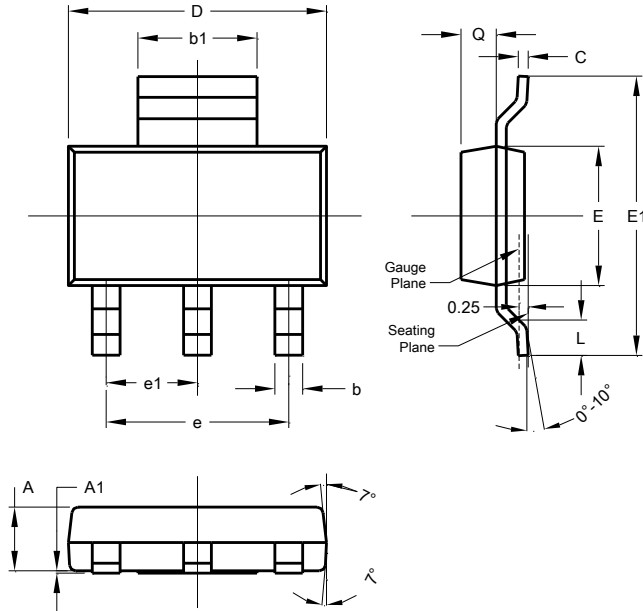
Note: 9. Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$. Duty cycle $\leq 2\%$.

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



Package Outline Dimensions

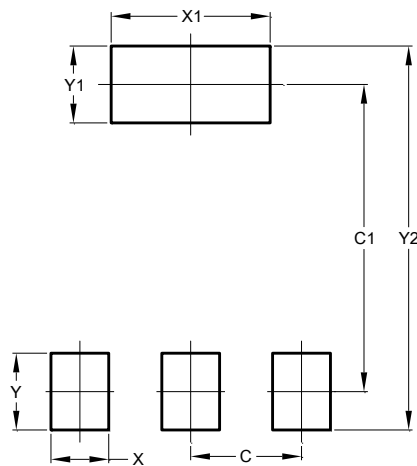
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOT223			
Dim	Min	Max	Typ
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b1	2.90	3.10	3.00
b2	0.60	0.80	0.70
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 AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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

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