

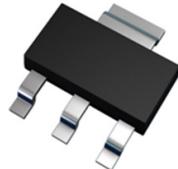
Features

- $BV_{CEO} > -500V$
- $I_C = -150mA$ High Continuous Current
- $I_{CM} = -500mA$ Peak Pulse Current
- **Lead-Free Finish; RoHS compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

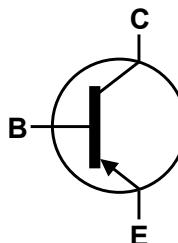
Mechanical Data

- 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)

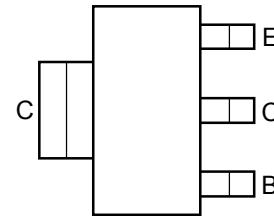
SOT223



Top View



Device Symbol



Top View
Pin-Out

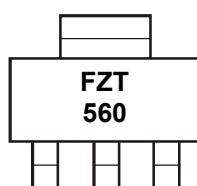
Ordering Information (Notes 4 & 5)

Product	Compliance	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FZT560TA	AEC-Q101	FZT560	7	12	1,000
FZT560QTA	Automotive	FZT560	7	12	1,000
FZT560TC	AEC-Q101	FZT560	13	12	4,000
FZT560QTC	Automotive	FZT560	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/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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to http://www.diodes.com/quality/product_compliance_definitions/.
5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>

Marking Information



FZT560 = Product Type Marking Code

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

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

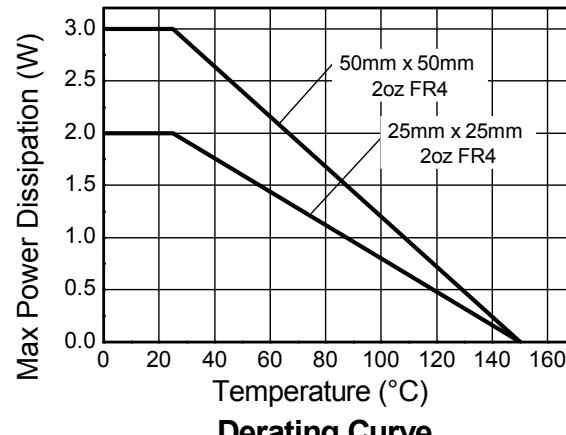
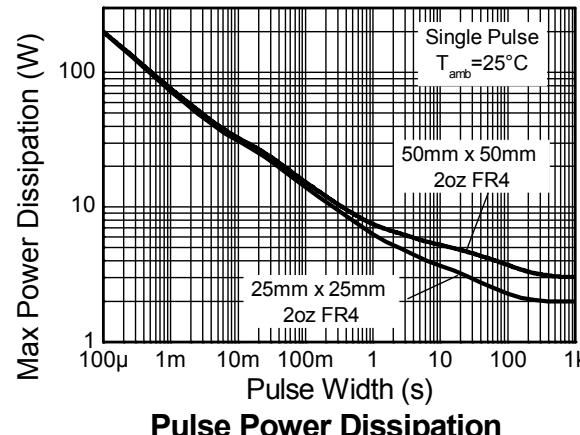
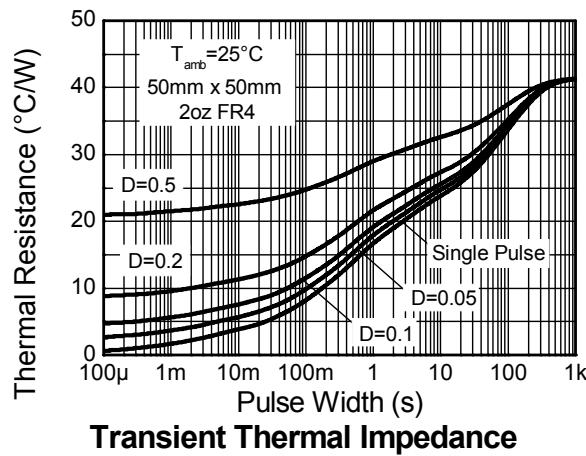
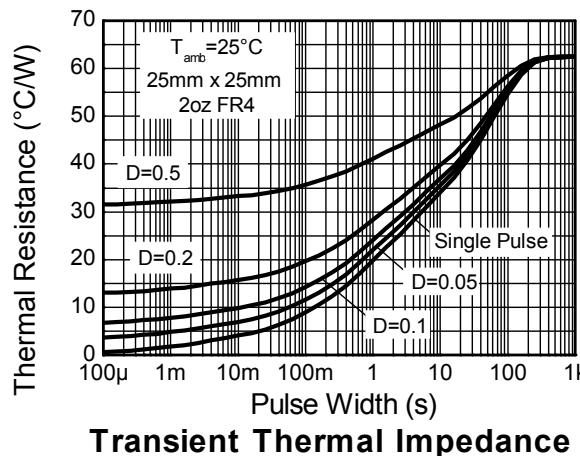
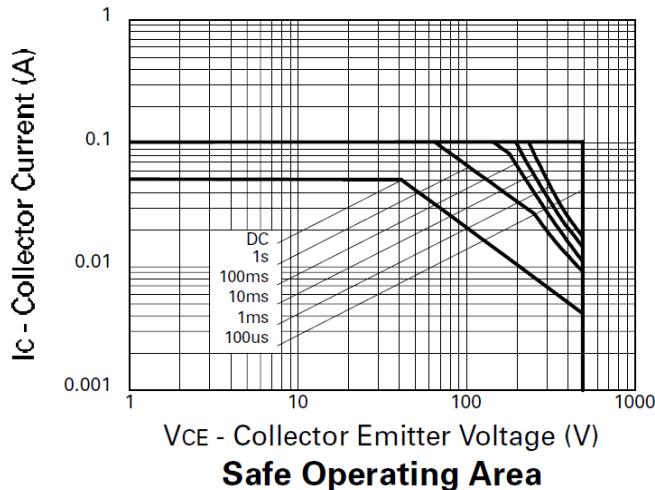
ESD Ratings (Note 9)

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:

6. For a device mounted with the collector lead on 25mm x 25mm 2oz copper that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in steady-state.
7. Same as note (6), except the device is mounted on 50mm x 50mm 2oz copper.
8. Thermal resistance from junction to solder-point (at the end of the collector lead).
9. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

Thermal Characteristics and Derating Information

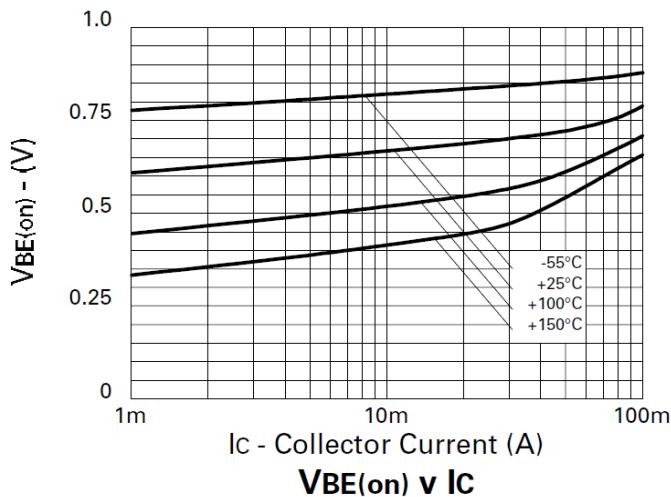
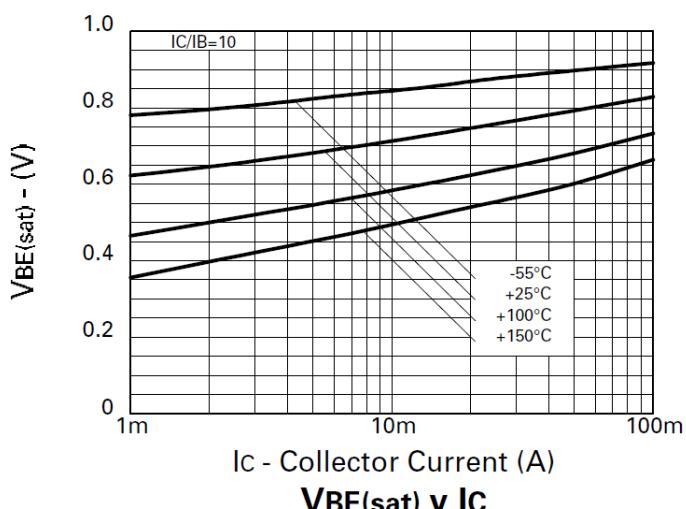
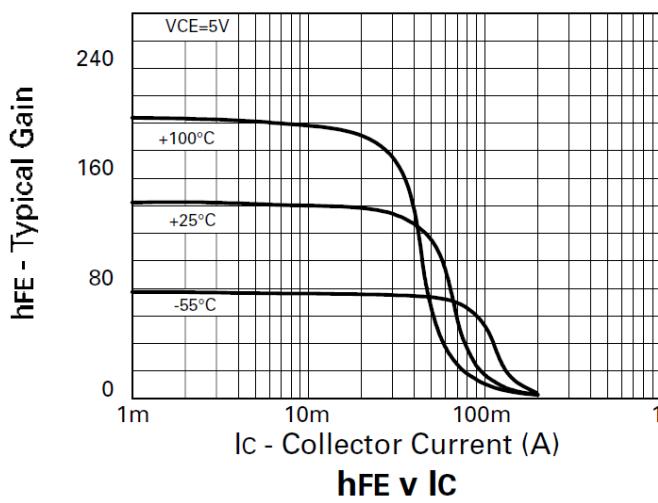
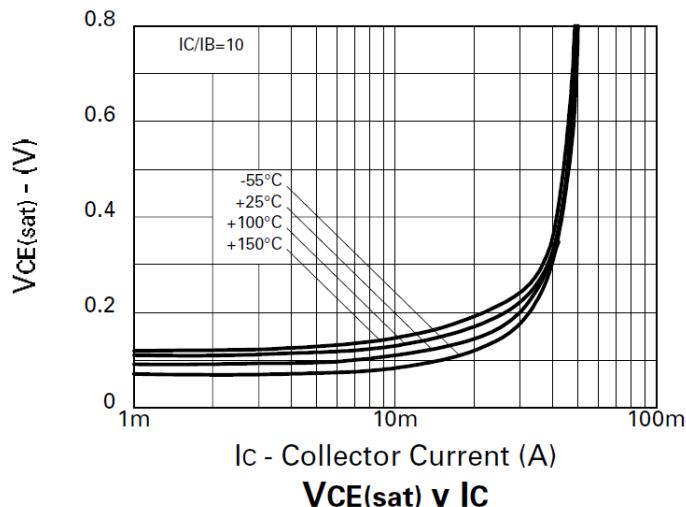
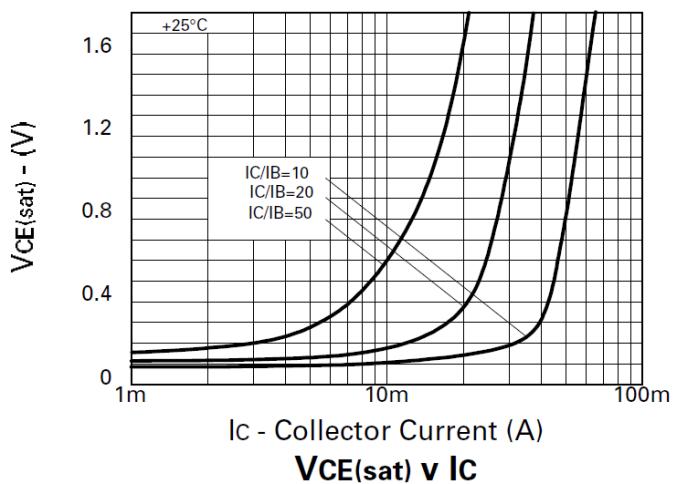


Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

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

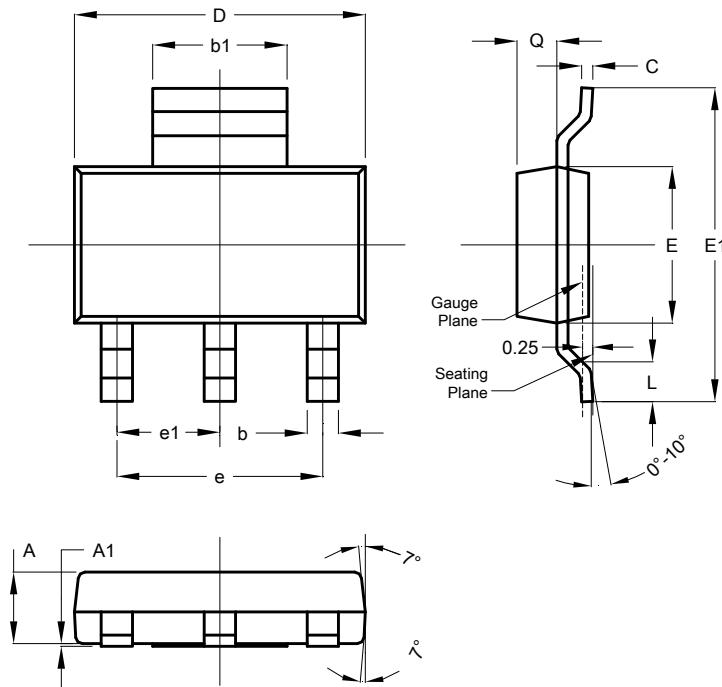
Notes: 10. Measured under pulsed conditions. Pulse width $\leq 300\ \mu\text{s}$. Duty cycle $\leq 2\%$

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



Package Outline Dimensions

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

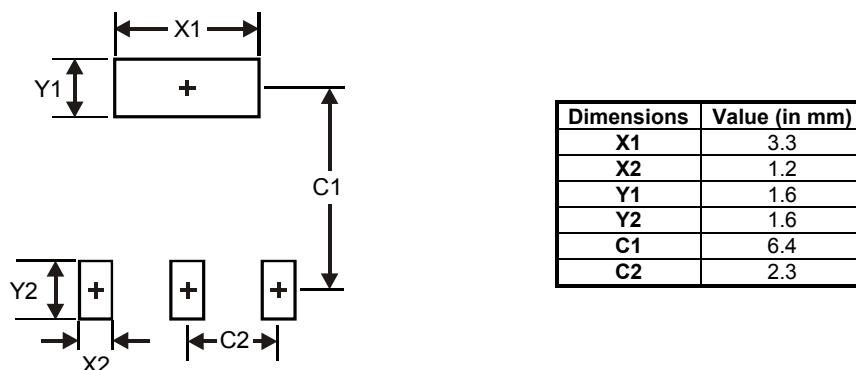


SOT223			
Dim	Min	Max	Typ
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b	0.60	0.80	0.70
b1	2.90	3.10	3.00
C	0.20	0.30	0.25
D	6.45	6.55	6.50
E	3.45	3.55	3.50
E1	6.90	7.10	7.00
e	-	-	4.60
e1	-	-	2.30
L	0.85	1.05	0.95
Q	0.84	0.94	0.89

All Dimensions in mm

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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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