

60V PNP HIGH PERFORMANCE TRANSISTOR IN SOT223

Features

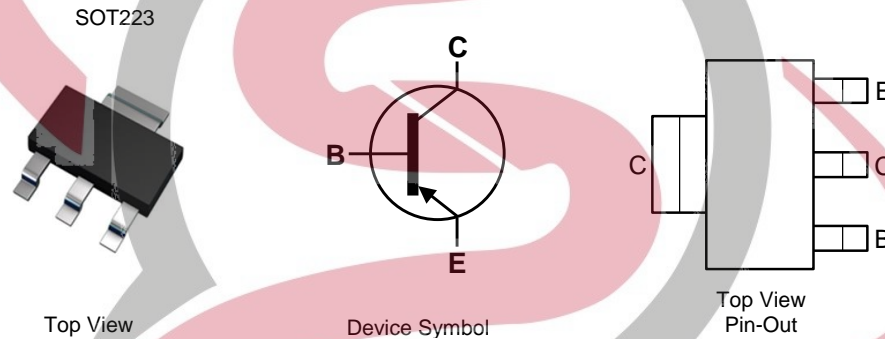
- $BV_{CE0} > -60V$
- $I_C = -3A$ High Continuous Current
- $I_{CM} = -6A$ Peak Pulse Current
- Low Saturation Voltage $V_{CE(sat)} < -300mV @ -1A$
- Complementary NPN Type: FZT651
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified 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 (3)
- Weight: 0.112 grams (Approximate)

Applications

- Automotive Lighting
- MOSFET and IGBT Gate Driving

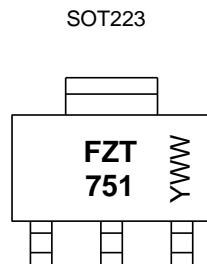


Ordering Information (Note 4)

Product	Compliance	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FZT751TA	AEC-Q101	FZT751	7	12	1,000
FZT751TC	AEC-Q101	FZT751	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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



FZT 751 = 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)

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-80	V
Collector-Emitter Voltage	V _{CEO}	-60	V
Emitter-Base Voltage	V _{EBO}	-7	V
Continuous Collector Current	I _C	-3	A
Peak Pulse Current	I _{CM}	-6	A

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

Characteristic	Symbol	Value	Unit
Power Dissipation	P _D	(Note 5) 2	W
		(Note 6) 3	W
Thermal Resistance, Junction to Ambient	R _{θJA}	(Note 5) 62.5	°C/W
		(Note 6) 41.7	°C/W
Thermal Resistance, Junction to Leads	R _{θJL}	12.9	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

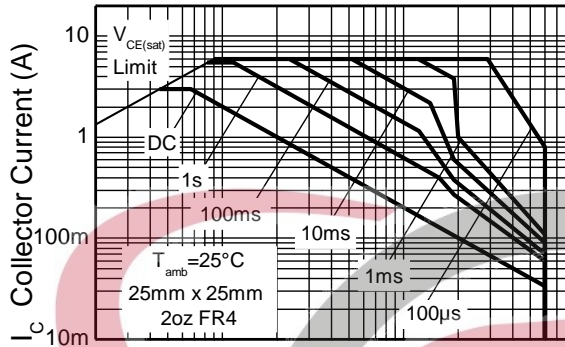
ESD Ratings (Note 8)

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

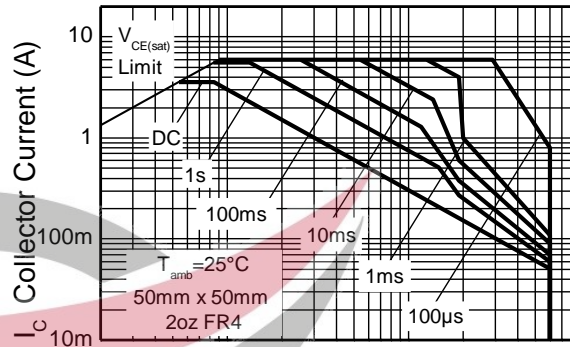
- Notes:
- For a device mounted with the collector lead on 25mm x 25mm 2oz copper that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in steady-state.
 - Same as Note 5, except the device is mounted on 50mm x 50mm 2oz copper.
 - Thermal resistance from junction to solder-point (at the end of the collector lead).
 - Refer to JEDEC specification JESD22-A114 and JESD22-A115.



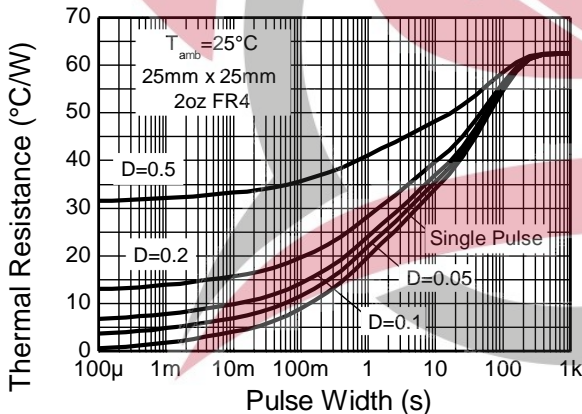
Thermal Characteristics and Derating Information



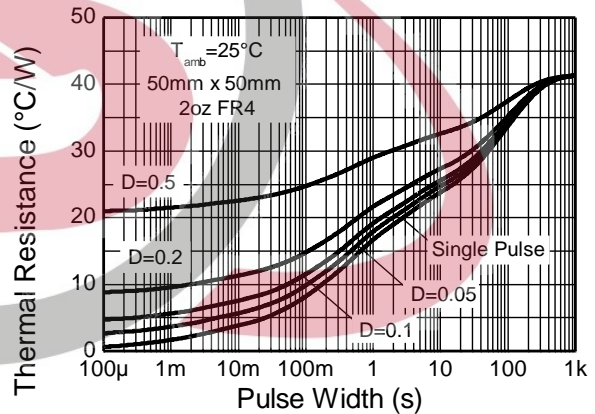
V_{CE} Collector-Emitter Voltage (V)
Safe Operating Area



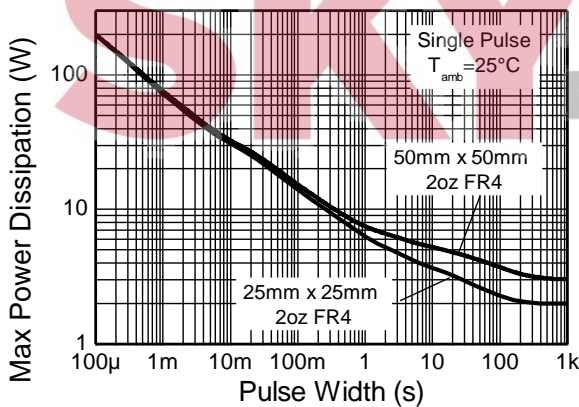
V_{CE} Collector-Emitter Voltage (V)
Safe Operating Area



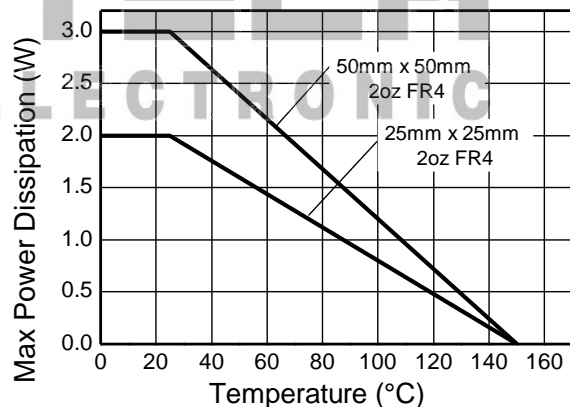
Transient Thermal Impedance



Transient Thermal Impedance



Pulse Power Dissipation



Derating Curve

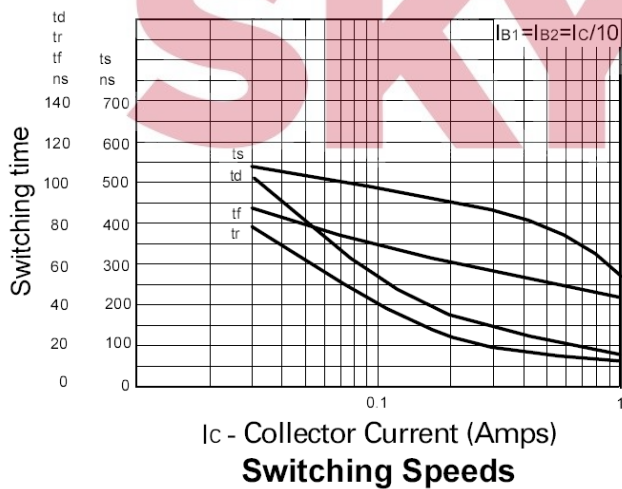
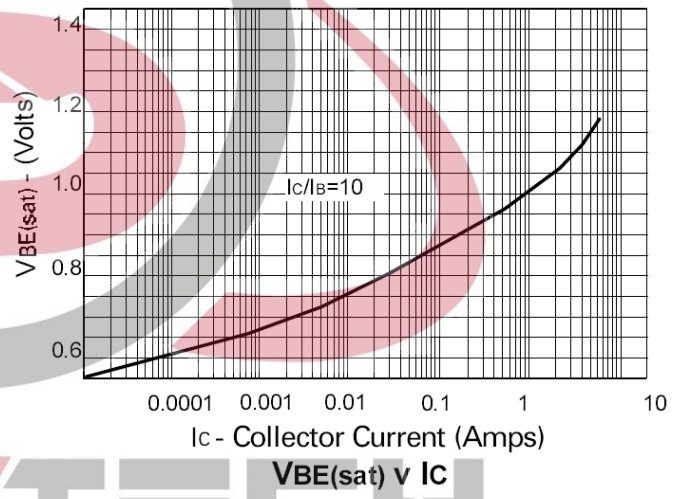
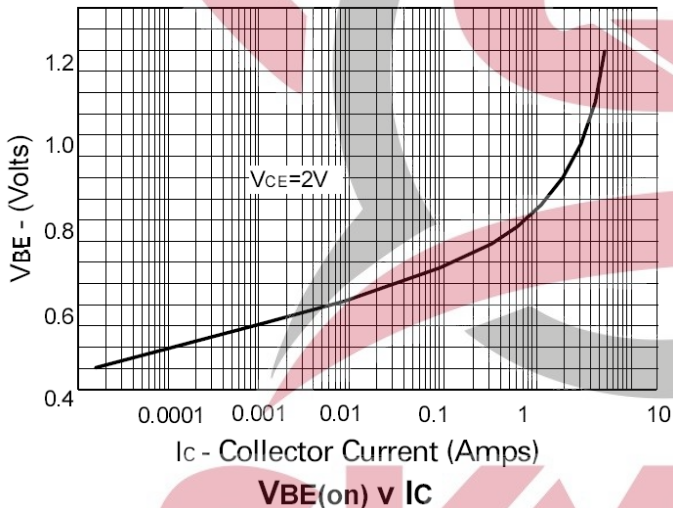
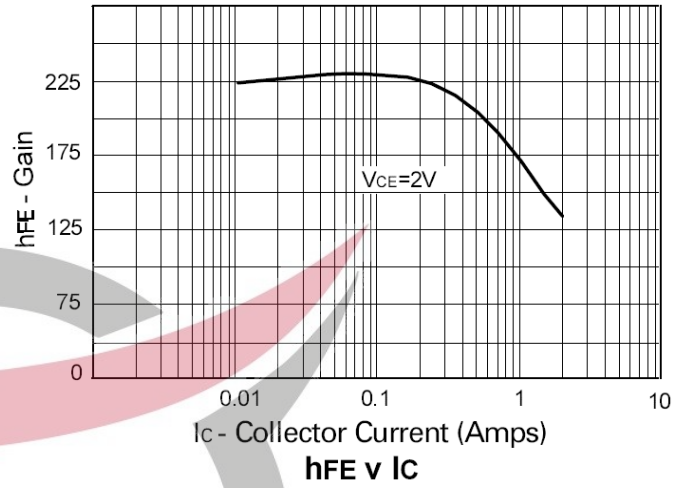
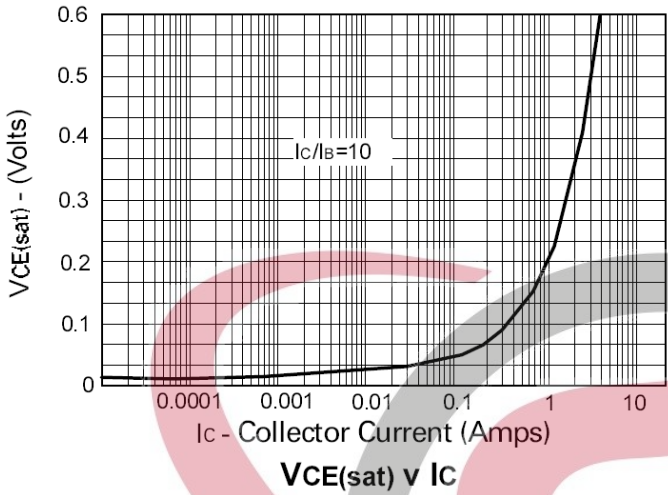
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-80	-	-	V	I _C = -100μA
Collector-Emitter Breakdown Voltage (Note 9)	BV _{CEO}	-60	-	-	V	I _C = -10mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-7	-	-	V	I _E = -100μA
Collector Cut-Off Current	I _{CBO}	-	<1	-100	nA	V _{CB} = -60V
		-	-	-10	μA	V _{CB} = -60V, T _{amb} = +100°C
Emitter Cut-Off Current	I _{EBO}	-	<1	-100	nA	V _{EB} = -4V
Collector-Emitter Saturation Voltage (Note 9)	V _{CE(sat)}	-	-0.15	-0.3	V	I _C = -1A, I _B = -100mA
		-	-0.45	-0.6	V	I _C = -3A, I _B = -300mA
Base-Emitter Saturation Voltage (Note 9)	V _{BE(sat)}	-	-0.9	-1.25	V	I _C = -1A, I _B = -100mA
Base-Emitter Turn-On Voltage (Note 9)	V _{BE(on)}	-	-0.8	-1.0	V	I _C = -1A, V _{CE} = -2V
DC Current Gain (Note 9)	h _{FE}	70	200	-	-	I _C = -50mA, V _{CE} = -2V
		100	200	300	-	I _C = -500mA, V _{CE} = -2V
		80	170	-	-	I _C = -1A, V _{CE} = -2V
		40	150	-	-	I _C = -2A, V _{CE} = -2V
Current Gain-Bandwidth Product	f _T	100	140	-	MHz	V _{CE} = -5V, I _C = -100mA f = 100MHz
Turn-On Time	t _{on}	-	40	-	ns	V _{CC} = -10V, I _C = -500mA
Turn-Off Time	t _{off}	-	450	-	ns	I _{B1} = I _{B2} = -50mA
Output Capacitance	C _{obo}	-	-	30	pF	V _{CB} = -10V, f = 1MHz

Note: 9. Measured under pulsed conditions. Pulse width ≤ 300 μs. Duty cycle ≤ 2%.

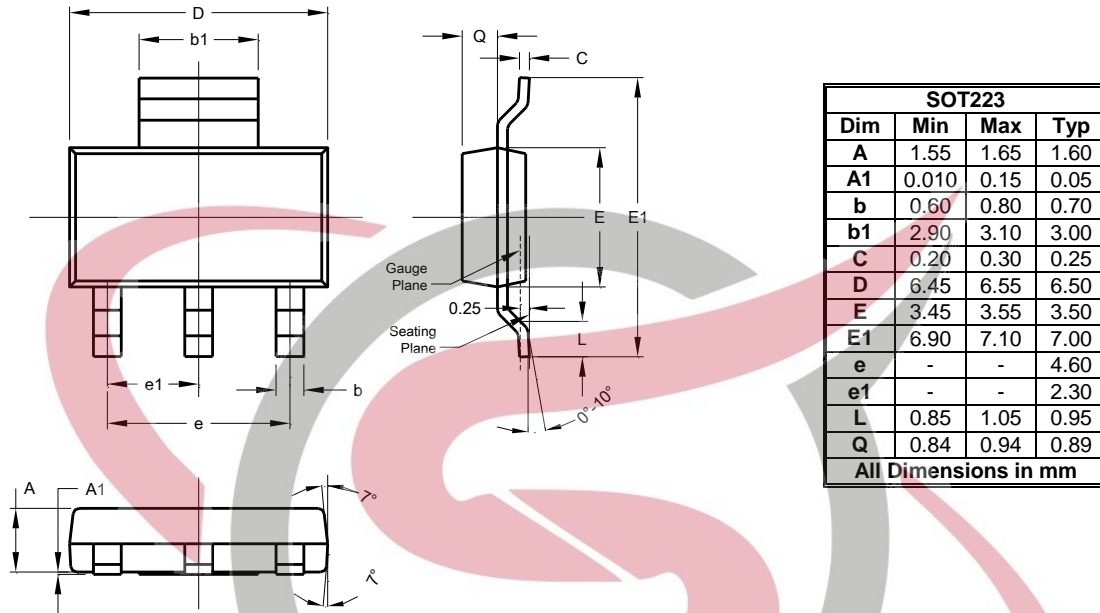


Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)



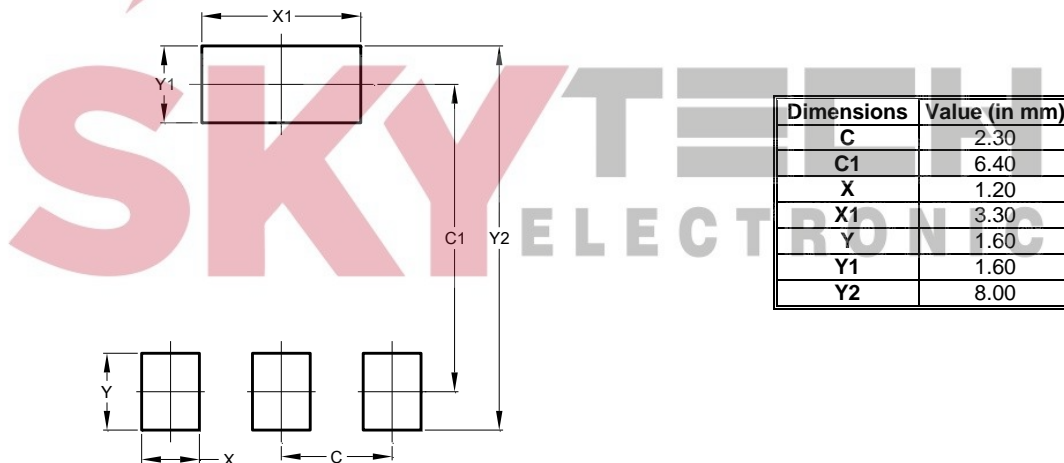
Package Outline Dimensions

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



Suggested Pad Layout

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



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