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FZT751TA

EN
This Datasheet is presented by the manufacturer

DE
Dieses Datenblatt wird vom Hersteller bereitgestellt

FR
Cette fiche technique est présentée par le fabricant

PNP SILICON PLANAR HIGH PERFORMANCE TRANSISTOR IN SOT223

Features

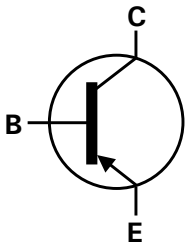
- BV_{CEO} > 60V
- Maximum continuous current $I_{C(cont)}$ = 3A
- Low Saturation Voltage
- Complementary Type – FZT651
- **Lead-Free Finish; RoHS compliant (Note 1)**
- **Halogen and Antimony Free. "Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

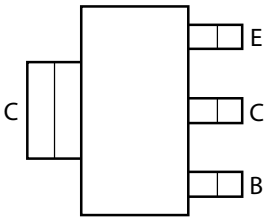
- Case: SOT223
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.112 grams (approximate)

SOT223

Top View



Device Symbol



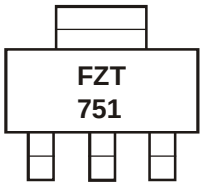
Top View
Pin-Out

Ordering Information (Notes 3 & 4)

Product	Grade	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FZT751TA	Commercial	FZT751	7	12	1,000
FZT751QTA	Automotive	FZT751	7	12	1,000
FZT751TC	Commercial	FZT751	13	12	4,000
FZT751QTC	Automotive	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. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
3. For packaging details, go to our website at http://www.diodes.com.
4. Products with Q-suffix are automotive grade. Automotive products are electrical and thermal the same as the commercial, except where specified.

Marking Information



FZT751 = Product Type Marking Code

Maximum Ratings @T_A = 25°C unless otherwise specified

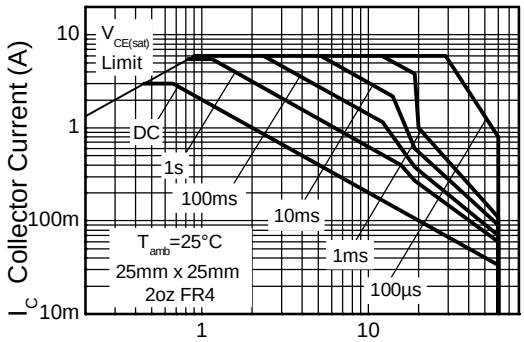
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-80	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-3	A
Peak Pulse Current	I_{CM}	-6	A

Thermal Characteristics @T_A = 25°C unless otherwise specified

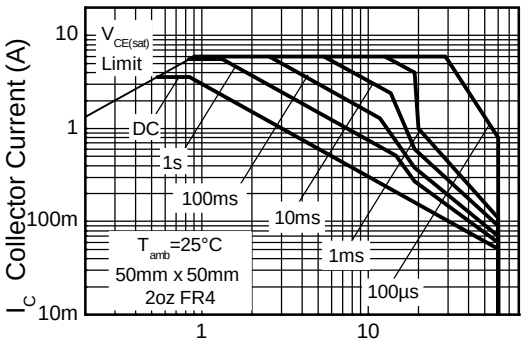
Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	2	W
	(Note 6)		3	W
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	62.5	°C/W
	(Note 6)		41.7	°C/W
Thermal Resistance, Junction to Leads	(Note 7)	$R_{\theta JL}$	12.93	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

Notes:
5. For devices mounted on 25mm x 25mm single sided 2oz weight copper, in still air conditions.
6. For devices mounted on 50mm x 50mm single sided 2oz weight copper, in still air conditions.
7. Thermal resistance from junction to solder-point (at the end of the collector lead)

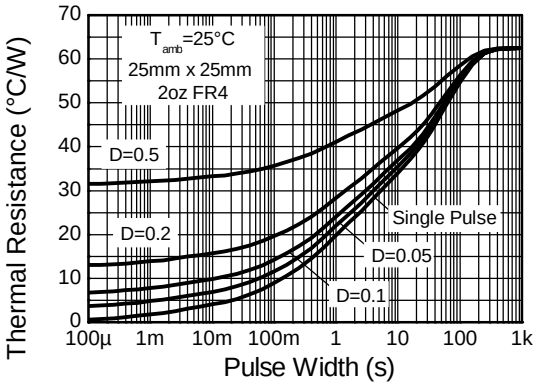
Thermal Characteristics



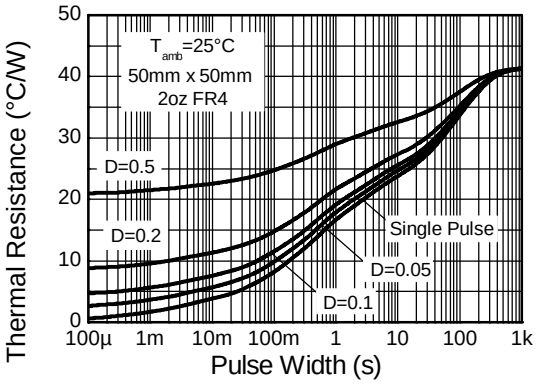
Safe Operating Area



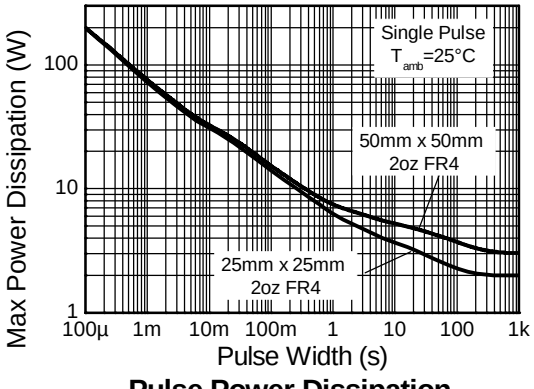
Safe Operating Area



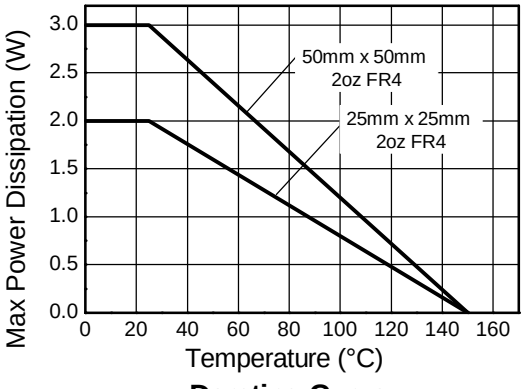
Transient Thermal Impedance



Transient Thermal Impedance



Pulse Power Dissipation



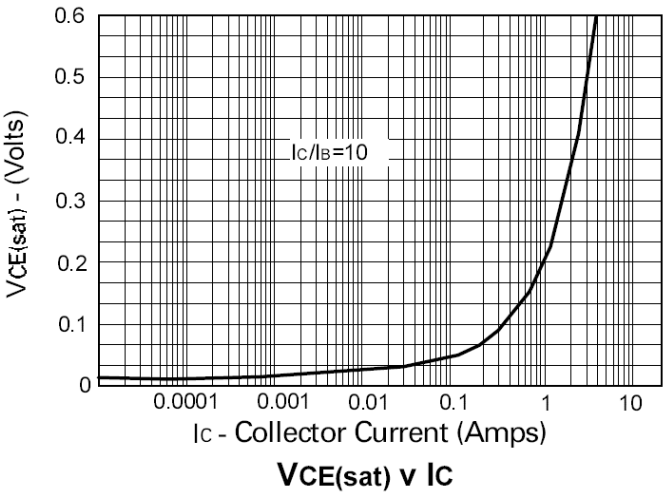
Derating Curve

Electrical Characteristics @T_A = 25°C unless otherwise specified

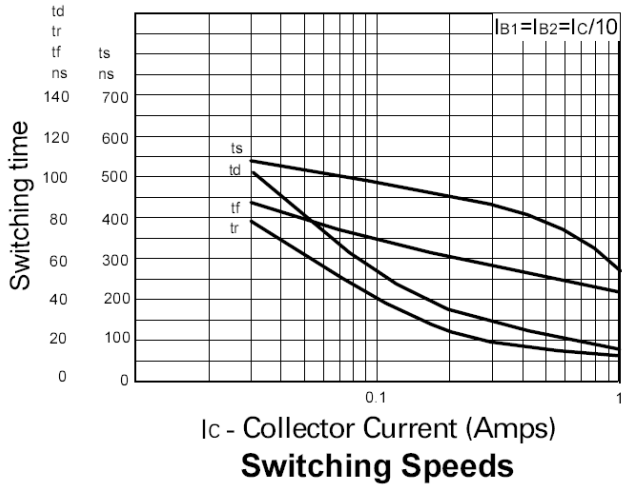
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-80	–	–	V	I_C = -100µA
Collector-Emitter Breakdown Voltage (Note 8)	BV_{CEO}	-60	–	–	V	I_C = -10mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	–	–	V	I_E = -100µA
Collector Cut-off Current	I_{CBO}	–	–	-0.1	µA	V_{CB} = -60V
		–	–	-10		V_{CB} = -60V, T_{amb} = 100°C
Emitter Cut-off Current	I_{EBO}	–	–	-0.1	µA	V_{EB} = -4V
Collector-Emitter Saturation Voltage (Note 8)	$V_{CE(sat)}$	–	-0.15	-0.3	V	I_C = -1A, I_B = -100mA
		–	-0.45	-0.6		I_C = -3A, I_B = -300mA
Base-Emitter Saturation Voltage (Note 8)	$V_{CE(sat)}$	–	-0.9	-1.25	V	I_C = -1A, I_B = -100mA
Base-Emitter Turn-On Voltage (Note 8)	$V_{BE(on)}$	–	-0.8	-1.0	V	I_C = -1A, V_{CE} = -2V
DC Current Gain (Note 8)	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 (Note 8)	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 (Note 8)	C_{obo}	–	–	30	pF	V_{CB} = -10V, f = 1MHz

Notes: 8. Measured under pulsed conditions. Pulse width ≤ 300 µs. Duty cycle ≤ 2%

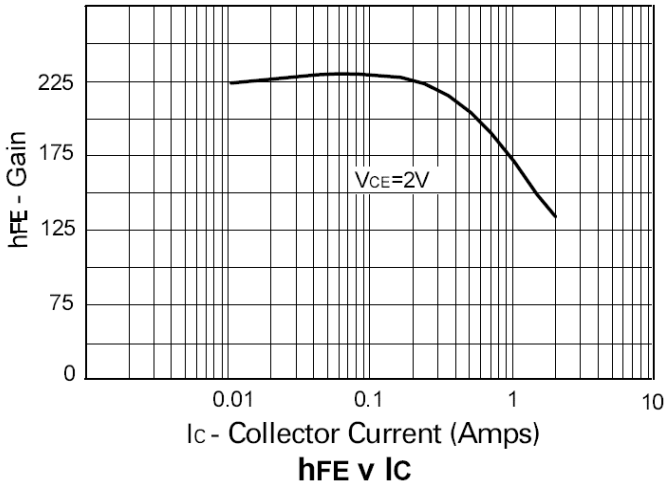
Typical Characteristics



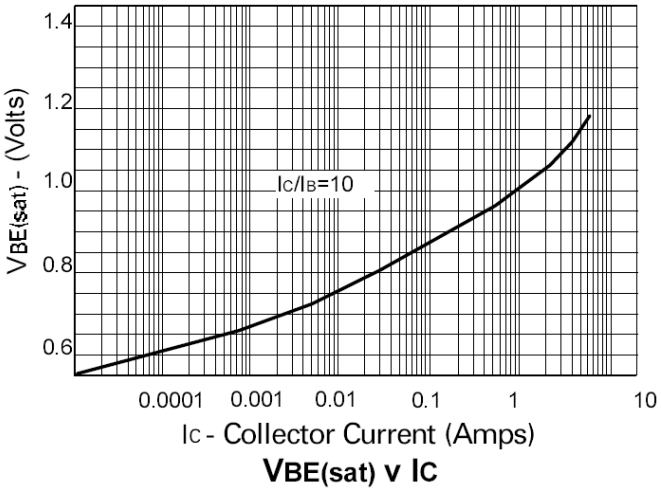
VCE(sat) v IC



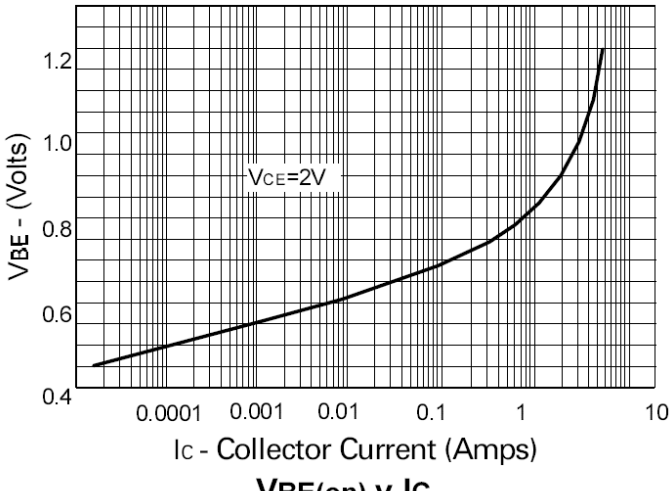
Switching Speeds



hFE v IC

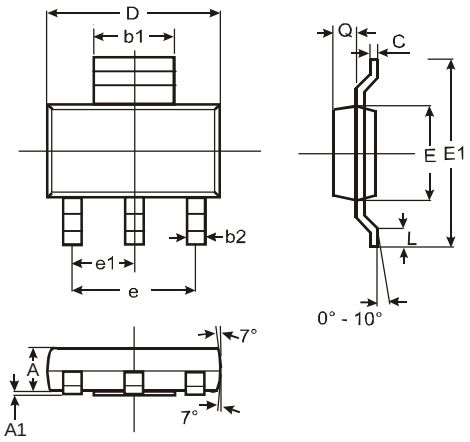


VBE(sat) v IC



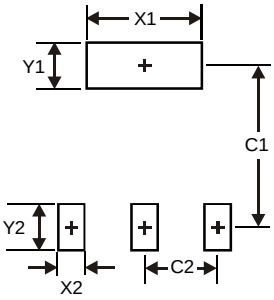
VBE(on) v IC

Package Outline Dimensions



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



Dimensions	Value (in mm)
X1	3.3
X2	1.2
Y1	1.6
Y2	1.6
C1	6.4
C2	2.3

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