

NPN Plastic-Encapsulate Transistors

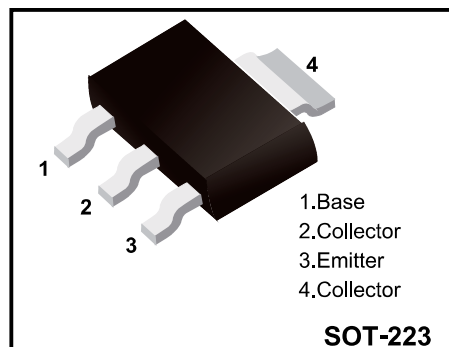
FEATURES

- ◆ 2 Amps continuous current
- ◆ Low saturation voltages
- ◆ High voltage
- ◆ Complement to FZT753

Marking Code

FZT653TA

YFW FZT653TA



Absolute Maximum Rating (TC=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	120	V
Collector-Emitter Voltage	BV_{CEO}	100	V
Emitter-Base Voltage	BV_{EBO}	5	V
Continuous Collector Current	I_C	3	A
Peak Pulse Current	I_{CM}	6	A
Power Dissipation at $T_C = 25^\circ\text{C}$	P_{TOT}	2	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$

Electrical Characteristics (TC=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu\text{A}, I_E = 0$	120			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1\text{mA}, I_B = 0$	100			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu\text{A}, I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 100\text{V}, I_B = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			0.1	μA
DC current gain	h_{FE}	$V_{CE} = 2\text{V}, I_C = 50\text{mA}$ $V_{CE} = 2\text{V}, I_C = 500\text{mA}$ $V_{CE} = 2\text{V}, I_C = 1\text{A}$ $V_{CE} = 2\text{V}, I_C = 2\text{A}$	70 100 55 25		300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$ $I_C = 2\text{A}, I_B = 200\text{mA}$			0.3 0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$			1.25	V
Base-emitter turn-on voltage	$V_{BE(on)}$	$V_{CE} = 2\text{V}, I_C = 1\text{A}$			1.0	V
Transition Frequency	f_T	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$	140			MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$			30	pF

Typical Characteristics

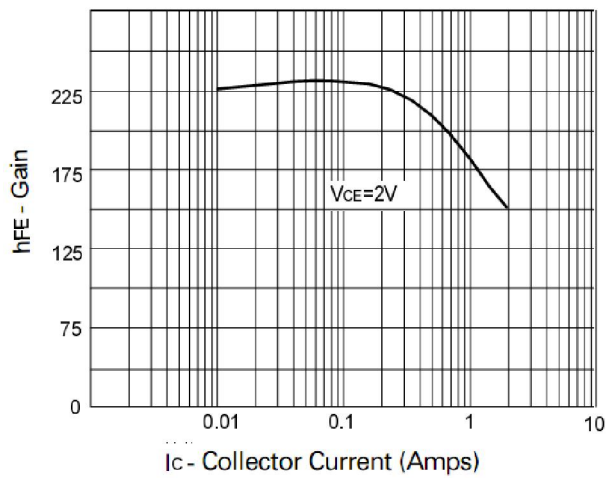


Figure 1. DC current Gain

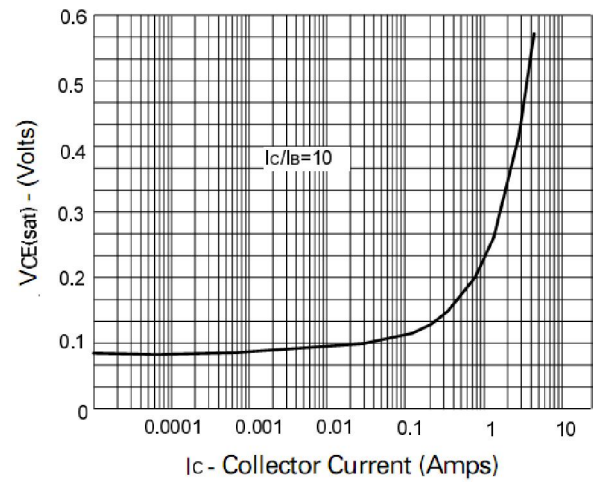


Figure 2. Collector-Emitter Saturation Voltage

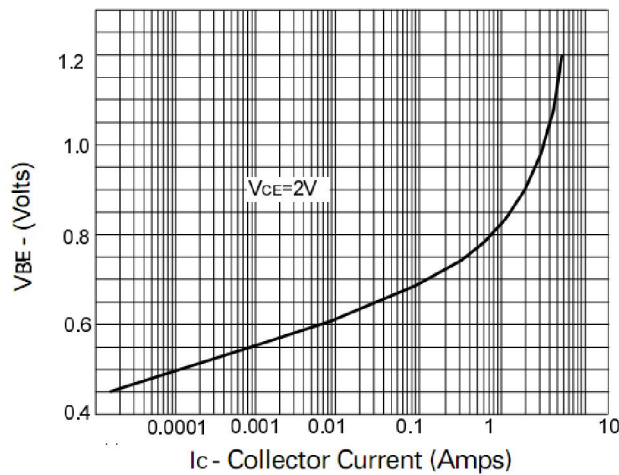


Figure 3. Base-Emitter on Voltage

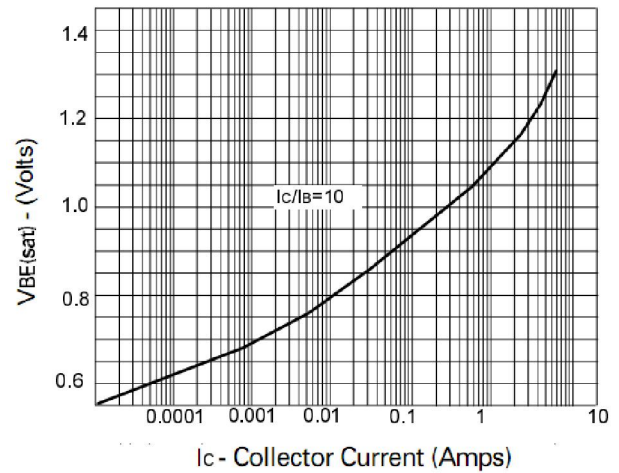


Figure 4. Base-Emitter Saturation Voltage

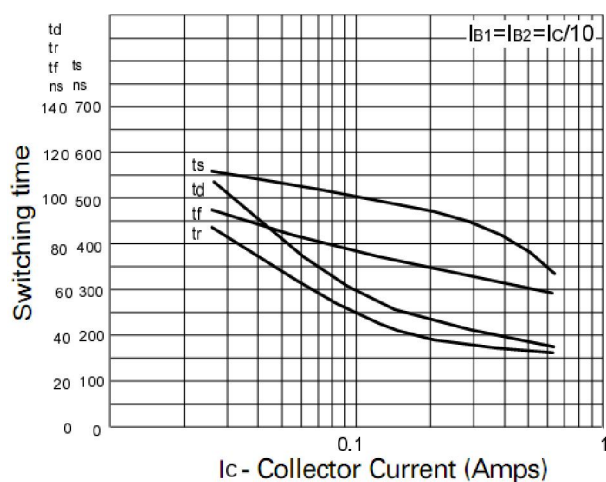


Figure 5. Switching Speeds

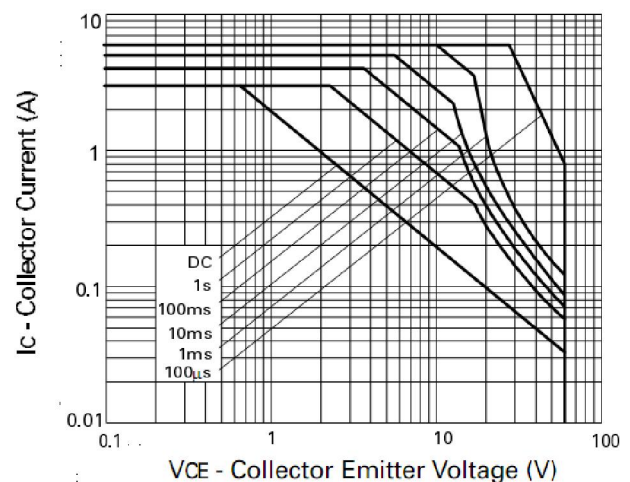


Figure 6. Safe Operating Area

Ordering information

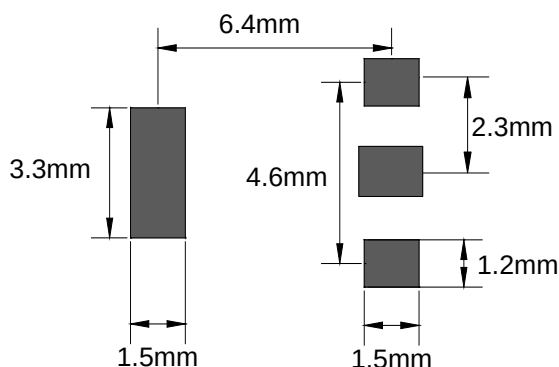
Package	Packing Description	Base Quantity	Packing Quantity
SOT-223	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton
	Tape/Reel, 13" reel	2500pcs/Reel	5000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-223

Dlm	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045

The recommended mounting pad size



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