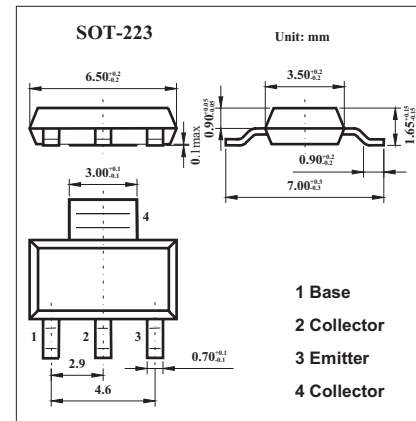


## NPN Silicon Planar High Performance Transistor

## FZT653

## ■ Features

- Low saturation voltage



## ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	120	V
Collector-Emitter Voltage	V <sub>CE0</sub>	100	V
Emitter-Base Voltage	V <sub>EB0</sub>	5	V
Peak Pulse Current	I <sub>CM</sub>	6	A
Continuous Collector Current	I <sub>C</sub>	2	A
Power Dissipation at T <sub>amb</sub> =25°C	P <sub>tot</sub>	2	W
Operating and Storage Temperature Range	T <sub>j</sub> ; T <sub>stg</sub>	-55 to +150	°C

## FZT653

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ.	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$	120			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}^*$	100			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$	5			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=100\text{V}$			0.1	$\mu\text{A}$
		$V_{CB}=100\text{V}, T_{amb}=100^\circ\text{C}$			10	$\mu\text{A}$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=4\text{V}$			0.1	$\mu\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=100\text{mA}^*$		0.13	0.3	V
		$I_C=2\text{A}, I_B=200\text{mA}^*$		0.23	0.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=100\text{mA}^*$		0.9	1.25	V
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	$I_C=1\text{A}, V_{CE}=2\text{V}^*$		0.8	1.0	V
Static Forward Current Transfer Ratio	$h_{FE}$	$I_C=50\text{mA}, V_{CE}=2\text{V}^*$	70	200		
		$I_C=500\text{mA}, V_{CE}=2\text{V}^*$	100	200	300	
		$I_C=1\text{A}, V_{CE}=2\text{V}^*$	55	110		
		$I_C=2\text{A}, V_{CE}=2\text{V}^*$	25	55		
Transition Frequency	$f_T$	$I_C=100\text{mA}, V_{CE}=5\text{V}, f=100\text{MHz}$	140	175		MHz
Output Capacitance	$C_{obo}$	$V_{CB}=10\text{V}, f=1\text{MHz}$			30	pF
Switching Times	$t_{on}$	$I_C=500\text{mA}, V_{CC}=10\text{V}$		80		ns
	$t_{off}$	$I_{B1}=I_{B2}=50\text{mA}$		1200		ns

\* Measured under pulsed conditions. Pulse Width=300 $\mu\text{s}$ . Duty cycle $\leq$ 2%

## ■ Marking

Marking	FZT653
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