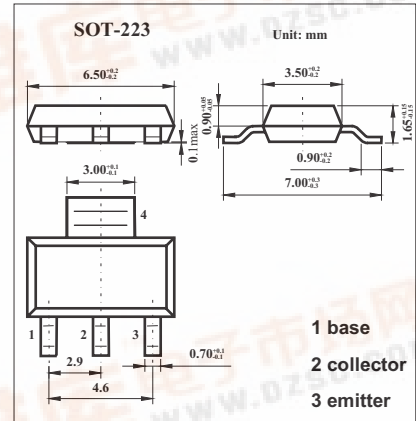


SMD Type Transistors

NPN Silicon Planar Medium Power High Gain Transistor FZT688B

Features

- Extremely low equivalent on resistance;  $R_{CE(sat)} 83m\Omega$  at 3A.
- Gain of 400 at  $I_c=3$  Amps and very low saturation voltage.



Absolute Maximum Ratings  $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	12	V
Collector-emitter voltage	$V_{CEO}$	12	V
Emitter-base voltage	$V_{EBO}$	5	V
Peak pulse current	$I_c$	4	A
Continuous collector current	$I_{CM}$	10	A
Power dissipation	$P_{tot}$	2	W
Operating and storage temperature range	$T_j, T_{stg}$	-55 to +150	$^\circ C$

## FZT688B

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Breakdown Voltages	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA	12			V
Breakdown Voltages	V <sub>(BR)CEO</sub>	I <sub>C</sub> =10mA	12			V
Breakdown Voltages	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA	5			V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =10V			0.1	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V			0.1	μA
Collector-emitter saturation voltage *	V <sub>CE(sat)</sub>	I <sub>C</sub> =0.1A, I <sub>B</sub> =1mA I <sub>C</sub> =0.1A, I <sub>B</sub> =0.5mA I <sub>C</sub> =1A, I <sub>B</sub> =50mA I <sub>C</sub> =3A, I <sub>B</sub> =20mA I <sub>C</sub> =4A, I <sub>B</sub> =50mA			0.04 0.06 0.18 0.35 0.40	V
Base-emitter saturation voltage *	V <sub>BE(sat)</sub>	I <sub>C</sub> =3A, I <sub>B</sub> =20mA			1.1	V
Base-Emitter Turn-On Voltage *	V <sub>BE(on)</sub>	I <sub>C</sub> =3A, V <sub>CE</sub> =2V			1.0	V
Static Forward Current Transfer Ratio*	h <sub>FE</sub>	I <sub>C</sub> =0.1A, V <sub>CE</sub> =2V I <sub>C</sub> =3A, V <sub>CE</sub> =2V I <sub>C</sub> =10A, V <sub>CE</sub> =2V	500 400 100			
Transitional frequency	f <sub>T</sub>	I <sub>C</sub> =50mA, V <sub>CE</sub> =5V f=50MHz	150			MHz
Input capacitance	C <sub>ibo</sub>	V <sub>EB</sub> =0.5V, f=1MHz		200		pF
Output capacitance	C <sub>obo</sub>	V <sub>CB</sub> =10V, f=1MHz		40		pF
Turn-on time	t <sub>(on)</sub>	I <sub>C</sub> =500mA, V <sub>CC</sub> =10V		40		ns
Turn-off time	t <sub>(off)</sub>	I <sub>B1</sub> =50A, I <sub>B2</sub> =50mA		500		ns

\* Pulse test: t<sub>p</sub> = 300 μs; d ≤ 0.02.

## ■ Marking

Marking	FZT688B
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