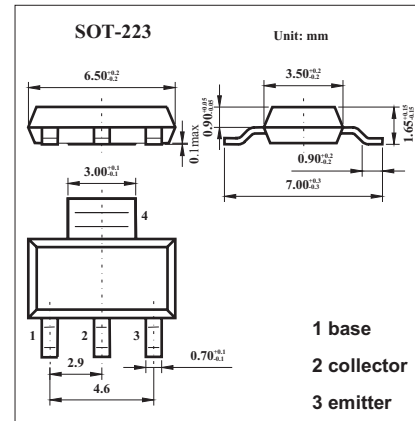


## NPN Silicon Planar Medium Power High Gain Transistor FZT690B

### ■ Features

- Very low equivalent on-resistance;  $R_{CE(sat)}$  125m $\Omega$  at 2A.
- Gain of 400 at  $I_C=1$  Amp.
- Very low saturation voltage.



### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	45	V
Collector-emitter voltage	$V_{CEO}$	45	V
Emitter-base voltage	$V_{EBO}$	5	V
Peak pulse current	$I_C$	3	A
Continuous collector current	$I_{CM}$	6	A
Power dissipation	$P_{tot}$	2	W
Operating and storage temperature range	$T_j, T_{stg}$	-55 to +150	$^\circ\text{C}$

## FZT690B

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA	45			V
Collector-emitter breakdown voltage *	V <sub>(BR)CEO</sub>	I <sub>C</sub> =10mA	45			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA	5			V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =35V			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> =0.5mA I <sub>C</sub> =1A, I <sub>B</sub> =5mA			0.1 0.5	V
Base-emitter saturation voltage *	V <sub>BE(sat)</sub>	I <sub>C</sub> =1A, I <sub>B</sub> =10mA			0.9	V
Base-Emitter Turn-On Voltage *	V <sub>BE(on)</sub>	I <sub>C</sub> =1A, V <sub>CE</sub> =2V			0.9	V
Static Forward Current Transfer Ratio *	h <sub>FE</sub>	I <sub>C</sub> =100mA, V <sub>CE</sub> =2V I <sub>C</sub> =1A, V <sub>CE</sub> =2V I <sub>C</sub> =2A, V <sub>CE</sub> =2V I <sub>C</sub> =3A, V <sub>CE</sub> =2V	500 400 100 50			
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		16		pF
Turn-on time	t <sub>(on)</sub>	I <sub>C</sub> =500mA, V <sub>CC</sub> =10V		33		ns
Turn-off time	t <sub>(off)</sub>	I <sub>B1</sub> =50mA, I <sub>B2</sub> =50mA		1300		ns

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

## ■ Marking

Marking	FZT690B
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