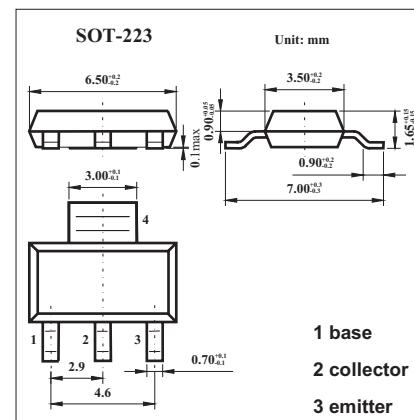


NPN Silicon Planar Medium Power High Gain Transistor FZT690B

■ Features

- Very low equivalent on-resistance; $R_{CE(sat)}$ 125mΩ 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	°C

FZT690B■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_c=100\mu\text{A}$	45			V
Collector-emitter breakdown voltage *	$V_{(BR)CEO}$	$I_c=10\text{mA}$	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_e=100\mu\text{A}$	5			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=35\text{V}$			0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4\text{V}$			0.1	μA
Collector-emitter saturation voltage *	$V_{CE(\text{sat})}$	$I_c=0.1\text{A}, I_b=0.5\text{mA}$ $I_c=1\text{A}, I_b=5\text{mA}$			0.1 0.5	V
Base-emitter saturation voltage *	$V_{BE(\text{sat})}$	$I_c=1\text{A}, I_b=10\text{mA}$			0.9	V
Base-Emitter Turn-On Voltage *	$V_{BE(\text{on})}$	$I_c=1\text{A}, V_{CE}=2\text{V}$			0.9	V
Static Forward Current Transfer Ratio *	h_{FE}	$I_c=100\text{mA}, V_{CE}=2\text{V}$ $I_c=1\text{A}, V_{CE}=2\text{V}$ $I_c=2\text{A}, V_{CE}=2\text{V}$ $I_c=3\text{A}, V_{CE}=2\text{V}$	500 400 100 50			
Transitional frequency	f_T	$I_c=50\text{mA}, V_{CE}=5\text{V} f=50\text{MHz}$	150			MHz
Input capacitance	C_{ib0}	$V_{EB}=0.5\text{V}, f=1\text{MHz}$		200		pF
Output capacitance	C_{ob0}	$V_{CB}=10\text{V}, f=1\text{MHz}$		16		pF
Turn-on time	$t_{(\text{on})}$	$I_c=500\text{mA}, V_{cc}=10\text{V}$		33		ns
Turn-off time	$t_{(\text{off})}$		$I_{b1}=50\text{mA}, I_{b2}=50\text{mA}$		1300	ns

* Pulse test: $t_p = 300 \mu\text{s}; d \leqslant 0.02$.

■ Marking

Marking	FZT690B
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