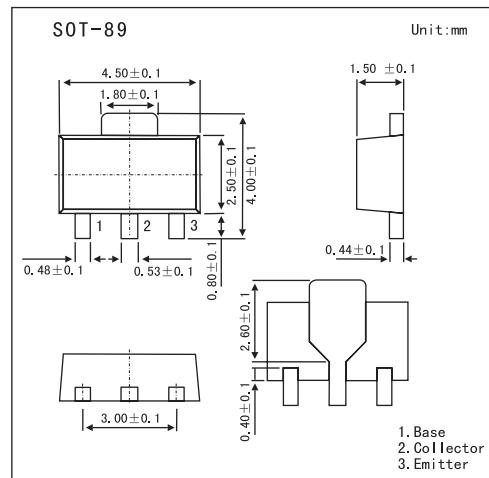


NPN Silicon Power Switching Transistor

FCX690B

■ Features

- 2W power dissipation.
- 6A peak pulse current.
- Gain of 400 @ $I_C=1\text{Amp}$.
- 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
Continuous collector current	I_{CM}	6	A
Peak pulse current	I_C	2	A
Power dissipation	P_{tot}	1	W
Operating and storage temperature range	T_j, T_{stg}	-55 to +150	°C

FCX690B■ 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}	$V_{CB}=9\text{V}$			0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4\text{V}$			0.1	μA
Collector-emitter saturation voltage *	$V_{CE(\text{sat})}$	$I_C=0.1\text{A}, I_B=0.5\text{mA}$ $I_C=1\text{A}, I_B=5\text{mA}$			80 300	mV
Base-emitter saturation voltage *	$V_{BE(\text{sat})}$	$I_C=1\text{A}, I_B=10\text{mA}$			1.1	V
Base-emitter ON voltage *	$V_{BE(\text{on})}$	$I_C=1\text{A}, V_{CE}=2\text{V}$			1.0	V
Static Forward Current Transfer Ratio*	h_{FE}	$I_C=100\text{mA}, V_{CE}=2\text{V}$ $I_C=1\text{A}, V_{CE}=2\text{V}$ $I_C=2\text{A}, V_{CE}=2\text{V}$	500 400 150			
Transitional frequency	f_T	$I_C=50\text{mA}, V_{CE}=5\text{V}, f=50\text{MHz}$	150			MHz
Input capacitance	$C_{i\text{bo}}$	$V_{EB}=0.5\text{V}, f=1\text{MHz}$		200		pF
Output capacitance	$C_{o\text{bo}}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		16		pF
Turn-on time	$t_{(\text{on})}$	$I_C=500\text{mA}, V_{CC}=10\text{V}$		33		ns
Turn-off time	$t_{(\text{off})}$	$I_B1=I_B2=50\text{mA}$		1300		ns

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

■ Marking

Marking	690
---------	-----