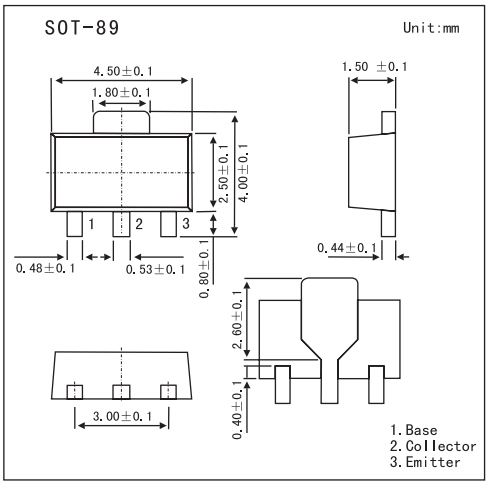
NPN Silicon Power Switching Transistor

FCX1053A



■ Features

- 2W power dissipation.
- 10A peak pulse current.
- Excellent HFE characteristics up to 10 Amps.
- Extremely low saturation voltage E.g. 21mv Typ.
- Extremely low equivalent on-resistance.

  $R_{CE(sat)}$ 78mΩ at 4.5A.

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	150	V
Collector-emitter voltage	V_{CEO}	75	V
Emitter-base voltage	V_{EBO}	5	V
Continuous collector current	I_{CM}	10	A
Peak pulse current	I_C	3	A
Power dissipation	P_{tot}	1	W
Operating and storage temperature range	T_j,T_{stg}	-55 to +150	℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA	150			V
Collector-emitter breakdown voltage *	$V_{(BR)CEO}$	I_C=10mA	75			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA	5			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=120V		0.9	10	nA
Collector Emitter Cut-Off Current	I_{CES}	V_{CE}=120V		1.5	10	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4V		0.3	10	nA
Collector-emitter saturation voltage *	$V_{CE(sat)}$	I_C=0.2A, I_B=20mA I_C=0.5A, I_B=20mA I_C=1A, I_B=10mA I_C=2A, I_B=100mA I_C=4.5A, I_B=200mA		21 55 150 160 350	30 75 200 210 440	mV
Base-emitter saturation voltage *	$V_{BE(sat)}$	I_C=3A, I_B=100mA		900	1000	mV
Base-emitter ON voltage *	$V_{BE(on)}$	I_C=3A, V_{CE}=2V		825	950	mV
Static Forward Current Transfer Ratio *	h_{FE}	I_C=10mA, V_{CE}=2V I_C=0.5A,V_{CE}=2V I_C=1A,V_{CE}=2V I_C=4.5A,V_{CE}=2V I_C=10A,V_{CE}=2V	270 300 300 40 -	440 450 450 60 20	1200 - -	
Transitional frequency	f_T	I_C=50mA, V_{CE}=10V f=100MHz		140		MHz
Output capacitance	C_{obo}	V_{CB}=10V, f=1MHz		21	30	pF
Turn-on time	$t_{(on)}$	I_C=2A, V_{CC}=50V		162		ns
Turn-off time	$t_{(off)}$	I_{B1}=I_{B2}=20mA		900		ns

* Pulse test: tp = 300 μs; d ⩽ 0.02.

■ Marking

Marking	053