

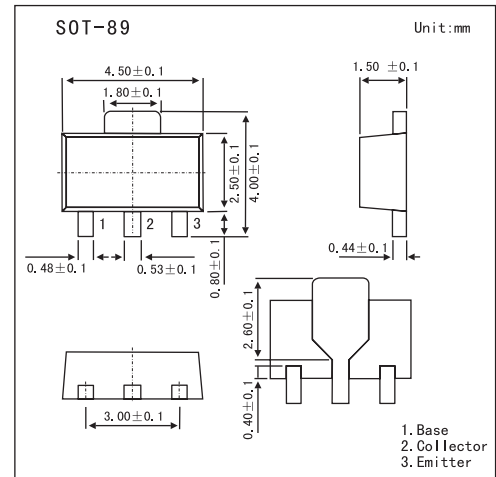
## NPN Silicon Power Switching Transistor

## FCX1051A

## ■ Features

- 2W power dissipation.
- 10A peak pulse current.
- Excellent HFE characteristics up to 10 Amps.
- Extremely low saturation voltage E.g. 17mv Typ.
- Extremely low equivalent on-resistance.

$R_{CE(sat)}$  57m $\Omega$  at 3A.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	150	V
Collector-emitter voltage	$V_{CE0}$	40	V
Emitter-base voltage	$V_{EB0}$	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	$^\circ\text{C}$

## FCX1051A

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA	150			V
Collector-emitter breakdown voltage *	V <sub>(BR)CEO</sub>	I <sub>C</sub> =10mA	40			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> =120V		0.3	10	nA
Collector Emitter Cut-Off Current	I <sub>CES</sub>	V <sub>CE</sub> =120V		0.3	10	nA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V		0.3	10	nA
Collector-emitter saturation voltage *	V <sub>CE(sat)</sub>	I <sub>C</sub> =0.2A, I <sub>B</sub> =10mA I <sub>C</sub> =1A, I <sub>B</sub> =10mA I <sub>C</sub> =2A, I <sub>B</sub> =20mA I <sub>C</sub> =3A, I <sub>B</sub> =40mA I <sub>C</sub> =5A, I <sub>B</sub> =100mA		17 85 140 170 250	25 120 180 250 340	mV
Base-emitter saturation voltage *	V <sub>BE(sat)</sub>	I <sub>C</sub> =3A, I <sub>B</sub> =40mA		880	1000	mV
Base-emitter ON voltage *	V <sub>BE(on)</sub>	I <sub>C</sub> =3A, V <sub>CE</sub> =2V		840	950	mV
Static Forward Current Transfer Ratio*	h <sub>FE</sub>	I <sub>C</sub> =10mA, V <sub>CE</sub> =2V I <sub>C</sub> =1A, V <sub>CE</sub> =2V I <sub>C</sub> =3A, V <sub>CE</sub> =2V I <sub>C</sub> =5A, V <sub>CE</sub> =2V I <sub>C</sub> =10A, V <sub>CE</sub> =2V	290 270 270 130 40	440 450 360 220 55	1200 - -	
Transitional frequency	f <sub>T</sub>	I <sub>C</sub> =50mA, V <sub>CE</sub> =10V f=100MHz		155		MHz
Output capacitance	C <sub>obo</sub>	V <sub>CB</sub> =10V, f=1MHz		27	40	pF
Turn-on time	t <sub>(on)</sub>	I <sub>C</sub> =3A, V <sub>CC</sub> =10V		220		ns
Turn-off time	t <sub>(off)</sub>	I <sub>B1</sub> =I <sub>B2</sub> =30mA		540		ns

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

## ■ Marking

Marking	051
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