

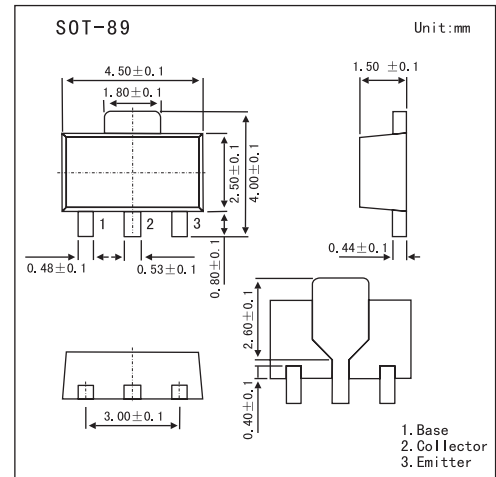
NPN Silicon Power Switching Transistor

FCX1047A

■ Features

- 2W power dissipation.
- 20A peak pulse current.
- Excellent HFE characteristics up to 20 Amps.
- Extremely low saturation voltage E.g. 25mv Typ.
- Extremely low equivalent on-resistance.

$R_{CE(sat)}$ 40m Ω at 4A.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	35	V
Collector-emitter voltage	V_{CEO}	10	V
Emitter-base voltage	V_{EBO}	5	V
Continuous collector current	I_{CM}	20	A
Peak pulse current	I_C	4	A
Power dissipation	P_{tot}	1	W
Operating and storage temperature range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$

FCX1047A

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =100μA	35			V
Collector-emitter breakdown voltage *	V _{(BR)CEO}	I _C =10mA	10			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =100μA	5			V
Collector Cut-Off Current	I _{CBO}	V _{CB} =20V		0.3	10	nA
Collector Emitter Cut-Off Current	I _{CES}	V _{CE} =20V		0.3	10	nA
Emitter Cut-Off Current	I _{EBO}	V _{EB} =4V		0.3	10	nA
Collector-emitter saturation voltage *	V _{CE(sat)}	I _C =0.5A, I _B =10mA I _C =1A, I _B =10mA I _C =3A, I _B =15mA I _C =4A, I _B =50mA I _C =5A, I _B =25mA		25 50 140 160 220	40 70 200 240 350	mV
Base-emitter saturation voltage *	V _{BE(sat)}	I _C =4A, I _B =50mA		920	1000	mV
Base-emitter ON voltage *	V _{BE(on)}	I _C =4A, V _{CE} =2V		860	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 =4A, V _{CE} =2V I _C =5A, V _{CE} =2V I _C =20A, V _{CE} =2V	280 290 300 200 200 60	430 440 450 350 330 110		
Transitional frequency	f _T	I _C =50mA, V _{CE} =10V f=50MHz		150		MHz
Output capacitance	C _{obo}	V _{CB} =10V, f=1MHz		85		pF
Turn-on time	t _(on)	I _C =4A, V _{CC} =10V		130		ns
Turn-off time	t _(off)	I _{B1} =I _{B2} =40mA		230		ns

* Pulse test: t_p = 300 μs; d ≤ 0.02.

■ Marking

Marking	047
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