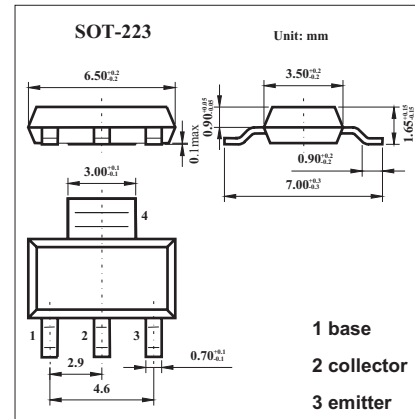


## NPN Silicon Planar Medium Power High Gain Transistor

### FZT1049A

#### ■ Features

- $V_{CE0} = 30V$ .
- 5 Amp continuous current.
- 20 Amp pulse current.
- Low saturation voltage.
- High gain.
- Extremely low equivalent on-resistance;  $R_{CE(sat)} = 50m\Omega$  at 5A.



#### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	80	V
Collector-emitter voltage	$V_{CEO}$	30	V
Emitter-base voltage	$V_{EBO}$	5	V
Peak pulse current	$I_C$	5	A
Continuous collector current	$I_{CM}$	20	A
Base current	$I_B$	500	mA
Power dissipation	$P_{tot}$	2.5	W
Operating and storage temperature range	$T_j, T_{stg}$	-55 to +150	$^\circ C$

**FZT1049A**

## ■ 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	80	130		V
Collector-emitter breakdown voltage *	V <sub>(BR)CEO</sub>	I <sub>C</sub> =10mA	30	40		V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA	5	9		V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =35V		0.3	10	nA
Collector-emitter cut-off current	I <sub>CES</sub>	V <sub>CE</sub> =35V		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> =0.5A, I <sub>B</sub> =10mA I <sub>C</sub> =1A, I <sub>B</sub> =10mA I <sub>C</sub> =3A, I <sub>B</sub> =30mA I <sub>C</sub> =5A, I <sub>B</sub> =50mA		35 70 180 250	60 100 250 330	mV
Base-emitter saturation voltage *	V <sub>BE(sat)</sub>	I <sub>C</sub> =5A, I <sub>B</sub> =50mA		950	1050	mV
Base-emitter ON voltage *	V <sub>BE(on)</sub>	I <sub>C</sub> =5A, V <sub>CE</sub> =2V		900	1000	mV
Static Forward Current Transfer Ratio	h <sub>FE</sub>	I <sub>C</sub> =10mA, V <sub>CE</sub> =2V*	280	440		
		I <sub>C</sub> =0.5A, V <sub>CE</sub> =2V*	300	450		
		I <sub>C</sub> =1A, V <sub>CE</sub> =2V*	300	450	1200	
		I <sub>C</sub> =5A, V <sub>CE</sub> =2V*	180	280		
		I <sub>C</sub> =20A, V <sub>CE</sub> =2V*	40	80		
Transitional frequency	f <sub>T</sub>	I <sub>C</sub> =50mA, V <sub>CE</sub> =10V f=100MHz		180		MHz
Output capacitance	C <sub>obo</sub>	V <sub>CB</sub> =10V, f=1MHz		45	60	pF
Turn-on time	t <sub>(on)</sub>	I <sub>C</sub> =4A, V <sub>CC</sub> =10V		125		ns
Turn-off time	t <sub>(off)</sub>	I <sub>B1</sub> =I <sub>B2</sub> =40mA		380		ns

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