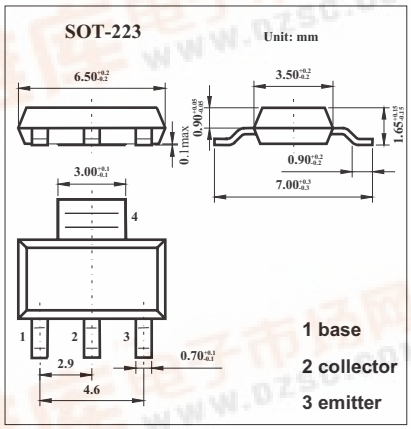
NPN Silicon Planar Medium Power High Gain Transistor

FZT1051A



Features

- V_{CEO} = 40V.
- 5 Amp continuous current.
- 20 Amp pulse current.
- Low saturation voltage.
- High gain.
- Extremely low equivalent on-resistance; $R_{CE(sat)}$ = 50mΩ at 5A.

Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	150	V
Collector-emitter voltage	V_{CEO}	40	V
Emitter-base voltage	V_{EBO}	5	V
Peak pulse current	I_C	5	A
Continuous collector current	I_{CM}	10	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	℃

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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	190		V
Collector-emitter breakdown voltage *	$V_{(BR)CEO}$	I_C=10mA	40	60		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA	5	9		V
Collector Cut-Off Current	I_{CBO}	V_{CB}=120V		0.3	10	nA
Collector-emitter cut-off current	I_{CES}	V_{CE}=120V		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=0.2A, I_B=10mA I_C=1A, I_B=10mA I_C=2A, I_B=20mA I_C=5A, I_B=100mA		17 85 140 250	25 120 180 340	mV
Base-emitter saturation voltage *	$V_{BE(sat)}$	I_C=5A, I_B=100mA		980	1100	mV
Base-emitter ON voltage *	$V_{BE(on)}$	I_C=5A, V_{CE}=2V		915	1000	mV
Static Forward Current Transfer Ratio	h_{FE}	I_C=10mA, V_{CE}=2V*	290	440		
		I_C=1A, V_{CE}=2V*	270	450	1200	
		I_C=5A, V_{CE}=2V*	130	220		
		I_C=10A, V_{CE}=2V*	40	55		
Transitional frequency	f_T	I_C=50mA, V_{CE}=10V f=100MHz		155		MHz
Output capacitance	C_{obo}	V_{CB}=10V, f=1MHz		27	40	pF
Turn-on time	$t_{(on)}$	I_C=3A, V_{CC}=10V		220		ns
Turn-off time	$t_{(off)}$	I_{B1}=I_{B2}=30mA		540		ns

* Pulse test: tp = 300 μs; d ⩽ 0.02.