SOT 223 NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

FZT1049A

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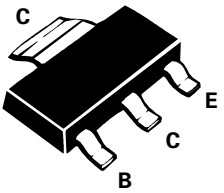

FEATURES

* V_{CEO} = 25V
* 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.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	20	A
Continuous Collector Current	I_C	**5**	A
Base Current	I_B	500	mA
Power Dissipation at T_{amb}=25°C †	P_{tot}	**2.5**	W
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°C

† The power which can be dissipated assuming the device is mounted in typical manner on a PCB with copper equal to 2 inches x 2 inches.

ZETEX
SEMICONDUCTORS

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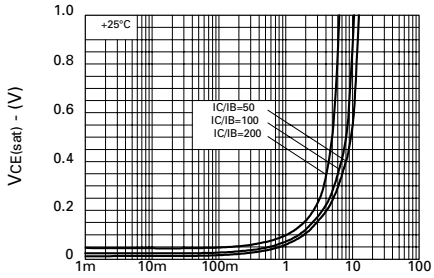
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

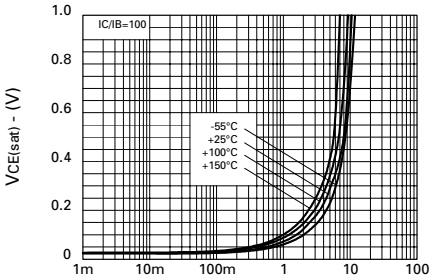
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80	130		V	I_C=100μA
Collector-Emitter Breakdown Voltage	V_{CES}	80	130		V	I_C=100μA *
Collector-Emitter Breakdown Voltage	V_{CEO}	25	30	V		I_C=10mA
Collector-Emitter Breakdown Voltage	V_{CEV}	80	130		V	I_C=100μA, V_{EB}=1V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	9		V	I_E=100μA
Collector Cut-Off Current	I_{CBO}		0.3	10	nA	V_{CB}=35V
Emitter Cut-Off Current	I_{EBO}		0.3	10	nA	V_{EB}=4V
Collector Emitter Cut-Off Current	I_{CES}		0.3	10	nA	V_{CES}=35V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		35 70 180 250	60 100 250 330	mV mV mV mV	I_C=0.5A, I_B=10mA* I_C=1A, I_B=10mA* I_C=3A, I_B=30mA* I_C=5A, I_B=50mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		950	1050	mV	I_C=5A, I_B=50mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		900	1000	mV	I_C=5A, V_{CE}=2V*
Static Forward Current Transfer Ratio	h_{FE}	280 300 300 180 40	440 450 450 280 80	1200		I_C=10mA, V_{CE}=2V* I_C=0.5A, V_{CE}=2V* I_C=1A, V_{CE}=2V* I_C=5A, V_{CE}=2V* I_C=20A, V_{CE}=2V*
Transition Frequency	f_T		180		MHz	I_C=50mA, V_{CE}=10V f=100MHz
Output Capacitance	C_{obo}		45	60	pF	V_{CB}=10V, f=1MHz
Turn-on Time	t_{on}		125		ns	I_C=4A, I_B=40mA, V_{CC}=10V
Turn-off Time	t_{off}		380		ns	

*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤ 2%

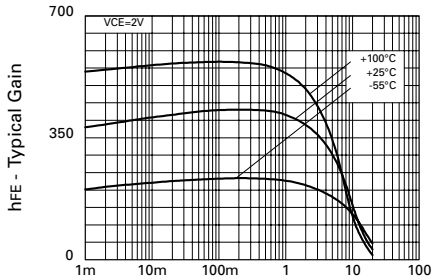
TYPICAL CHARACTERISTICS



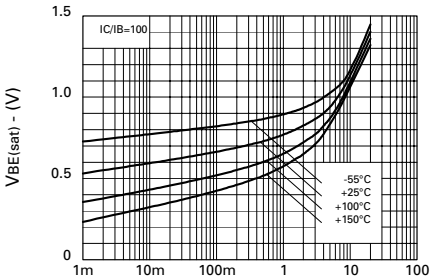
$V_{CE(sat)}$ v I_C



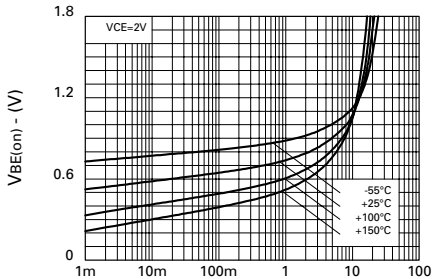
$V_{CE(sat)}$ v I_C



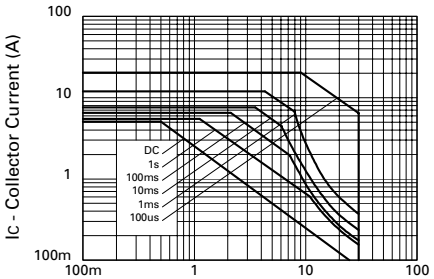
h_{FE} v I_C



$V_{BE(sat)}$ v I_C



VBE(on) v IC



Safe Operating Area