SOT223 PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

FZT789A

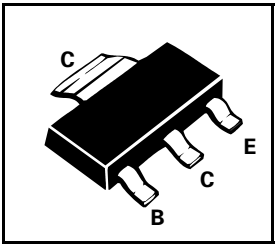
ISSUE 3 – OCTOBER 1995

FEATURES

* Extremely low equivalent on-resistance; **$R_{CE(sat)}$ 93mΩ at 3A**
* Gain of 200 at I_C=2 Amps and very low saturation voltage

APPLICATIONS

* Battery powered circuits, fast charge converters



COMPLEMENTARY TYPE - FZT689B

PARTMARKING DETAIL - FZT789A

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-25	V
Collector-Emitter Voltage	V_{CEO}	-25	V
Emitter-Base Voltage	V_{EBO}	-5	V
Peak Pulse Current	I_{CM}	-6	A
Continuous Collector Current	I_C	-3	A
Power Dissipation at T_{amb}=25°C	P_{tot}	2	W
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°C

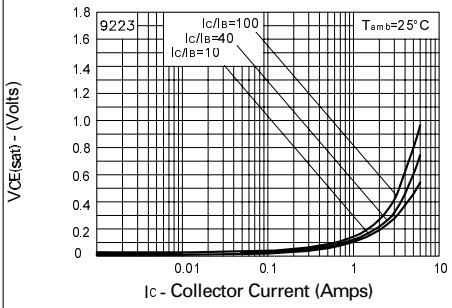
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Breakdown Voltages	$V_{(BR)CBO}$	-25	-40		V	I_C=-100μA
	$V_{(BR)CEO}$	-25	-35		V	I_C=-10mA*
	$V_{(BR)EBO}$	-5	-8.5		V	I_E=-100μA
Collector Cut-Off Current	I_{CBO}			-0.1 10	μA μA	V_{CB}=-15V V_{CB}=-15V, T_{amb}=100°C
Emitter Cut-Off Current	I_{EBO}			-0.1	μA	V_{EB}=-4V
Saturation Voltages	$V_{CE(sat)}$		-0.15 -0.30 -0.30	-0.25 -0.45 -0.50	V V V	I_C=-1A, I_B=-10mA* I_C=-2A, I_B=-20mA* I_C=-3A, I_B=-100mA*
	$V_{BE(sat)}$		-0.8	-1.0	V	I_C=-1A, I_B=-10mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-0.8		V	I_C=-1A, V_{CE}=-2V*
Static Forward Current Transfer Ratio	h_{FE}	300 250 200 100		800		I_C=-10mA, V_{CE}=-2V I_C=-1A, V_{CE}=-2V* I_C=-2A, V_{CE}=-2V* I_C=-6A, V_{CE}=-2V*
Transition Frequency	f_T	100			MHz	I_C=-50mA, V_{CE}=-5V, f=50MHz
Input Capacitance	C_{ibo}		225		pF	V_{EB}=-0.5V, f=1MHz
Output Capacitance	C_{obo}		25		pF	V_{CB}=-10V, f=1MHz
Switching Times	t_{on} t_{off}		35 400		ns ns	I_C=-500mA, I_{B1}=-50mA I_{B2}=-50mA, V_{CC}=-10V

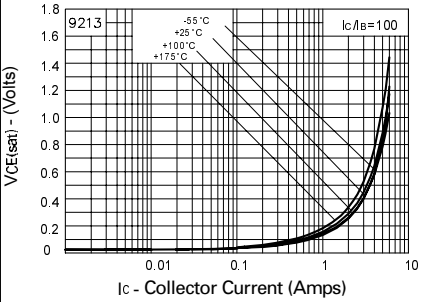
*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤2%

Spice parameter data is available upon request for this device

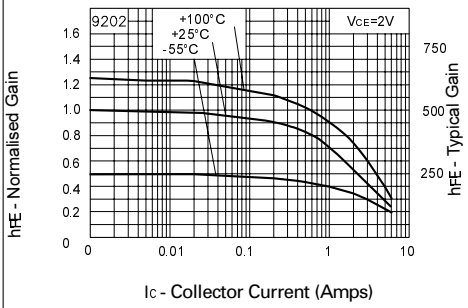
TYPICAL CHARACTERISTICS



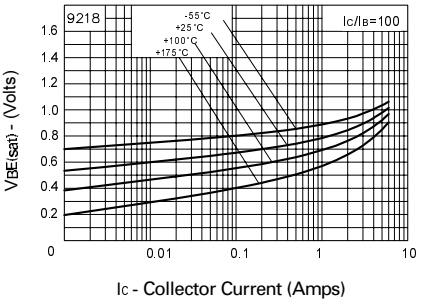
VCE(sat) v IC



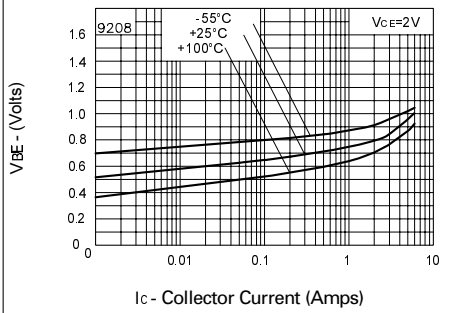
VCE(sat) v IC



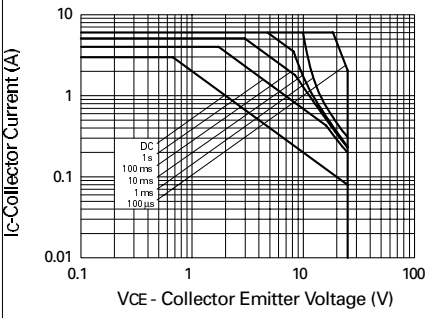
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area