

SOT223 PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

FZT789A

ISSUE 3 – OCTOBER 1995

FEATURES

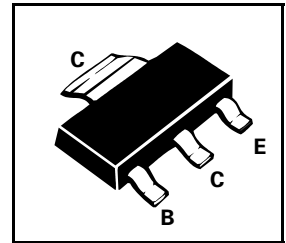
- * Extremely low equivalent on-resistance; $R_{CE(sat)}$ **93m Ω at 3A**
- * Gain of 200 at $I_C=2$ Amps and very low saturation voltage

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 $T_{amb}=25^\circ\text{C}$	P_{tot}	2	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^\circ\text{C}$

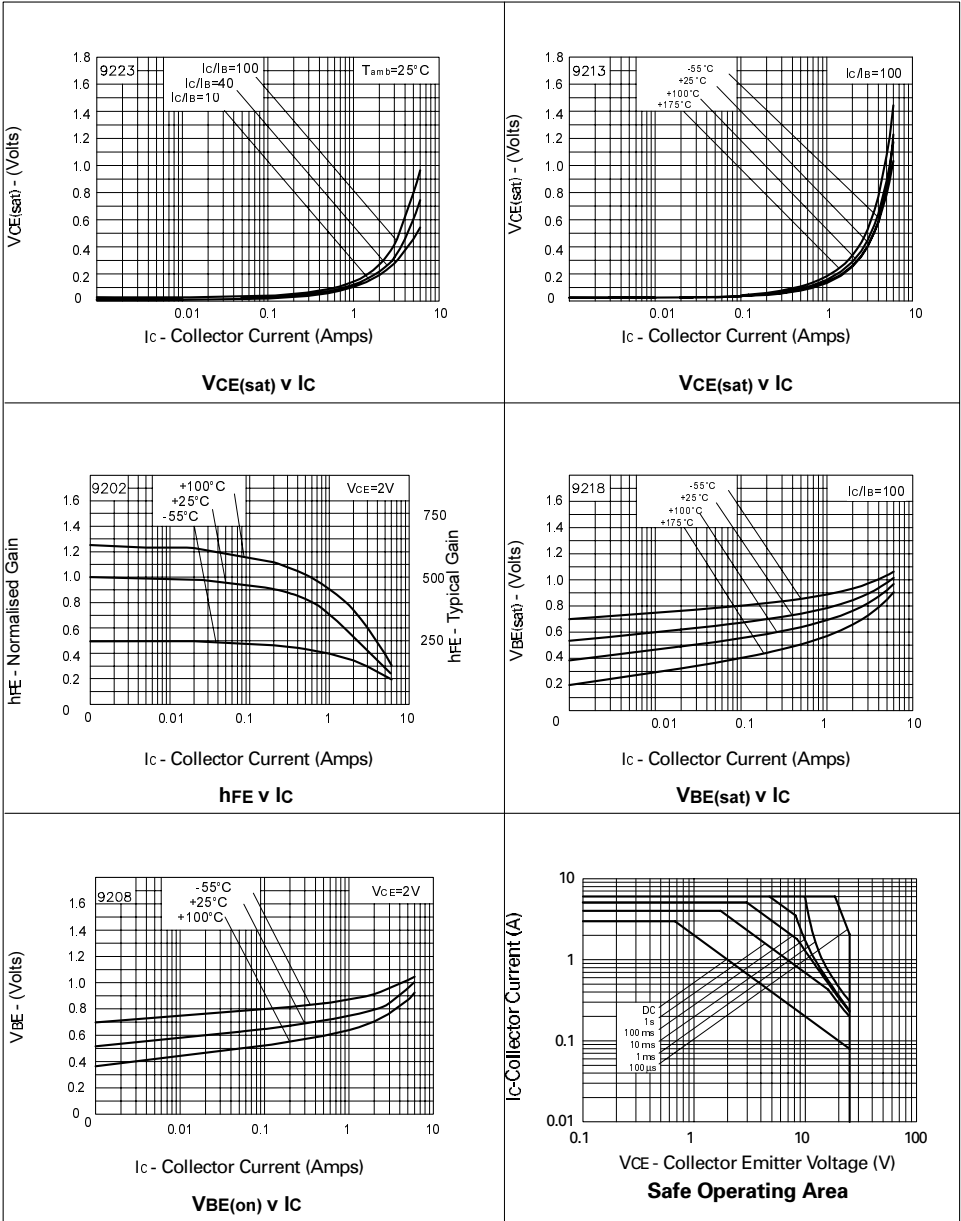
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$)

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

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$

Spice parameter data is available upon request for this device

TYPICAL CHARACTERISTICS





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