

# SOT223 PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

## FZT789A

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### FEATURES

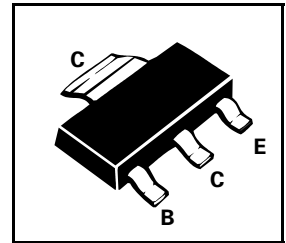
- \* Extremely low equivalent on-resistance;  $R_{CE(sat)}$  **93m $\Omega$  at 3A**
- \* Gain of 200 at  $I_C=2$  Amps and very low saturation voltage

### 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	$\mu\text{A}$ $\mu\text{A}$	$V_{CB}=-15\text{V}$ $V_{CB}=-15\text{V}$ , $T_{amb}=100^\circ\text{C}$
Emitter Cut-Off Current	$I_{EBO}$			-0.1	$\mu\text{A}$	$V_{EB}=-4\text{V}$
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 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

Spice parameter data is available upon request for this device

## TYPICAL CHARACTERISTICS

