

# SOT223 NPN SILICON PLANAR HIGH CURRENT (HIGH PERFORMANCE) TRANSISTOR

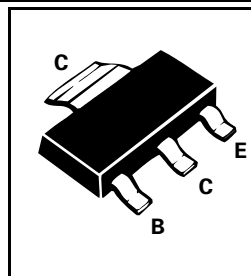
**FZT869**

ISSUE 2 - JANUARY 1996

## FEATURES

- \* Extremely low equivalent on-resistance;  $R_{CE(sat)} = 36m\Omega$  at 5A
- \* **7 Amp** continuous collector current (20 Amp peak)
- \* Very low saturation voltages
- \* Excellent gain characteristics specified upto 20 Amp
- \*  $P_{tot} = 3$  Watts

PARTMARKING DETAILS - FZT869



## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	25	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Peak Pulse Current	$I_{CM}$	20	A
Continuous Collector Current	$I_C$	7	A
Power Dissipation at $T_{amb} = 25^\circ C$	$P_{tot}$	3	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^\circ C$

\*The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 4 inch square minimum

# FZT869

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60	120		V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	60	120		V	$I_C=1\mu\text{A}$ , $R_B \leq 1\text{k}\Omega$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	25	35		V	$I_C=10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	8		V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$			50 1	nA $\mu\text{A}$	$V_{CB}=50\text{V}$ $V_{CB}=50\text{V}$ , $T_{amb}=100^{\circ}\text{C}$
Collector Cut-Off Current	$I_{CER}$ $R \leq 1\text{k}\Omega$			50 1	nA $\mu\text{A}$	$V_{CB}=50\text{V}$ $V_{CB}=50\text{V}$ , $T_{amb}=100^{\circ}\text{C}$
Emitter Cut-Off Current	$I_{EBO}$			10	nA	$V_{EB}=6\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		35 67 168	50 110 215 350	mV mV mV mV	$I_C=0.5\text{A}$ , $I_B=10\text{mA}^*$ $I_C=1\text{A}$ , $I_B=10\text{mA}^*$ $I_C=2\text{A}$ , $I_B=10\text{mA}^*$ $I_C=6.5\text{A}$ , $I_B=150\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.2	V	$I_C=6.5\text{A}$ , $I_B=300\text{mA}$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			1.13	V	$I_C=6.5\text{A}$ , $V_{CE}=1\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	300 300 200 40	450 450 300 100			$I_C=10\text{mA}$ , $V_{CE}=1\text{V}$ $I_C=1\text{A}$ , $V_{CE}=1\text{V}^*$ $I_C=7\text{A}$ , $V_{CE}=1\text{V}^*$ $I_C=20\text{A}$ , $V_{CE}=2\text{V}^*$
Transition Frequency	$f_T$		100		MHz	$I_C=100\text{mA}$ , $V_{CE}=10\text{V}$ $f=50\text{MHz}$
Output Capacitance	$C_{obo}$		70		pF	$V_{CB}=10\text{V}$ , $f=1\text{MHz}^*$
Switching Times	$t_{on}$ $t_{off}$		60 680		ns ns	$I_C=1\text{A}$ , $I_{B1}=100\text{mA}$ $I_{B2}=100\text{mA}$ , $V_{CC}=10\text{V}$

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$   
Spice parameter data is available upon request for this device



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

[LittleDiode.com](http://LittleDiode.com)

Looking forward to providing you with the best possible service.