

# SOT223 PNP SILICON PLANAR MEDIUM POWER TRANSISTOR

ISSUE 4 - NOVEMBER 1995

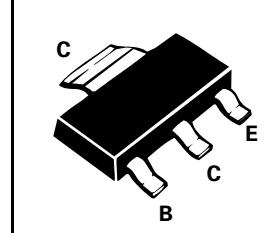
FZT749

## FEATURES

- \* 25 Volt  $V_{CEO}$
- \* 3 Amp continuous current
- \* Low saturation voltage
- \* Excellent  $h_{FE}$  specified up to 6A (pulsed).

COMPLEMENTARY TYPE – FZT649

PART MARKING DETAIL – FZT749



## ABSOLUTE MAXIMUM RATINGS.

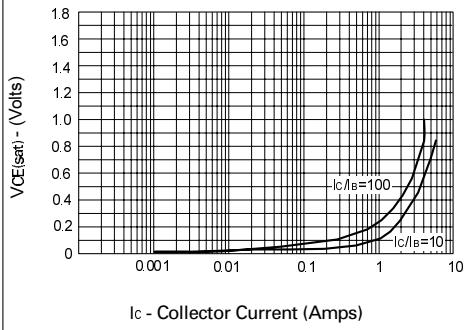
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	-35	V
Collector-Emitter Voltage	$V_{CEO}$	-25	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Peak Pulse Current	$I_{CM}$	-8	A
Continuous Collector Current	$I_C$	-3	A
Power Dissipation at $T_{amb}=25^\circ\text{C}$	$P_{tot}$	2	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	°C

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

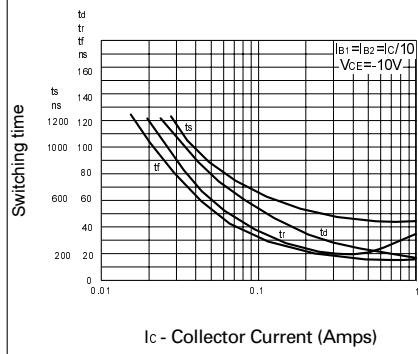
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Breakdown Voltages	$V_{(BR)CBO}$	-35			V	$I_C=100\mu\text{A}$
	$V_{(BR)CEO}$	-25			V	$I_C=10\text{mA}^*$
	$V_{(BR)EBO}$	-5			V	$I_E=100\mu\text{A}$
Collector Cut-Off Currents	$I_{CBO}$			-0.1 -10	$\mu\text{A}$	$V_{CE}=-30\text{V}$ $V_{CE}=-30\text{V}, T_{amb}=100^\circ\text{C}$
	$I_{EBO}$			-0.1	$\mu\text{A}$	$V_{EB}=4\text{V}$
Saturation Voltages	$V_{CE(\text{sat})}$		-0.12 -0.40	-0.3 -0.6	V	$I_C=1\text{A}, I_B=100\text{mA}^*$ $I_C=3\text{A}, I_B=300\text{mA}^*$
	$V_{BE(\text{sat})}$		-0.9	-1.25	V	$I_C=1\text{A}, I_B=100\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-0.8	-1.0	V	$I_C=1\text{A}, V_{CE}=2\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	70 100 75 15	200 200 150 50	300		$I_C=50\text{mA}, V_{CE}=2\text{V}^*$ $I_C=1\text{A}, V_{CE}=2\text{V}^*$ $I_C=2\text{A}, V_{CE}=2\text{V}^*$ $I_C=6\text{A}, V_{CE}=2\text{V}^*$
Transition Frequency	$f_T$	100	160		MHz	$I_C=100\text{mA}, V_{CE}=-5\text{V}$ $f=100\text{MHz}$
Output Capacitance	$C_{obo}$		55	100	pF	$V_{CB}=-10\text{V} f=1\text{MHz}$
Switching Times	$t_{on}$		40		ns	$I_C=500\text{mA}, V_{CC}=-10\text{V}$
	$t_{off}$		450		ns	$I_B=I_Z=50\text{mA}$

\*Measured under pulsed conditions. Pulse Width=300μs. Duty cycle ≤2%  
Spice parameter data is available upon request for this device

## TYPICAL CHARACTERISTICS

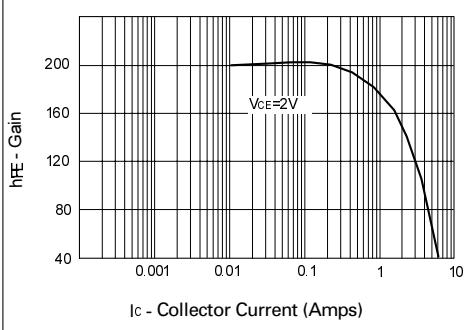


$V_{CE(sat)}$  v  $I_C$



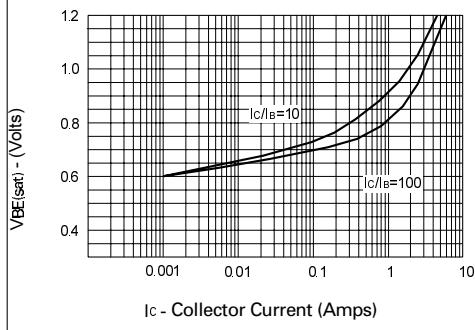
$I_C$  - Collector Current (Amps)

Switching Speeds



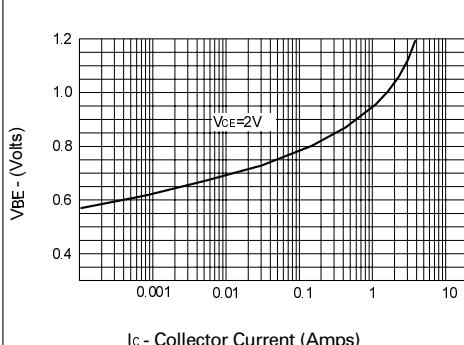
$I_C$  - Collector Current (Amps)

$h_{FE}$  v  $I_C$



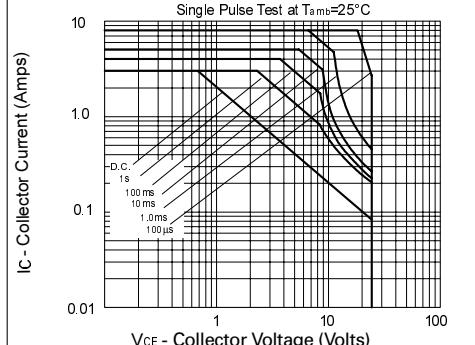
$I_C$  - Collector Current (Amps)

$V_{BE(sat)}$  v  $I_C$



$I_C$  - Collector Current (Amps)

$V_{BE(on)}$  v  $I_C$



Safe Operating Area