

# SOT223 PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

## FZT790A

ISSUE 3 - OCTOBER 1995

### FEATURES

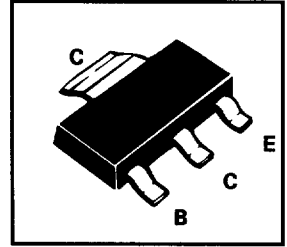
- \* Very low equivalent on-resistance;  $R_{CE(sat)}$  125m $\Omega$  at 2A
- \* Gain of 200 at  $I_C=1$  Amp and very low saturation voltage

### APPLICATIONS

- \* DC-DC converters, Siren drivers.

COMPLEMENTARY TYPE - FZT690B

PARTMARKING DETAIL - FZT790A



### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	-50	V
Collector-Emitter Voltage	$V_{CEO}$	-40	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	$^\circ\text{C}$

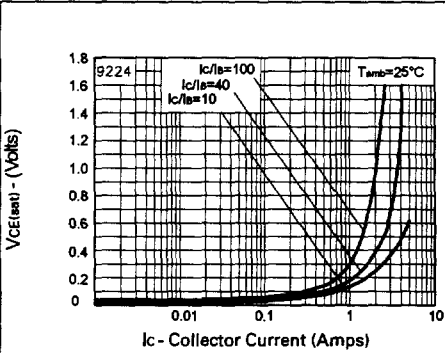
### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.	
Breakdown Voltages	$V_{(BR)CBO}$	-50	-70		V	$I_C=-100\mu\text{A}$	
	$V_{(BR)CEO}$	-40	-60		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	$\mu\text{A}$ $\mu\text{A}$	$V_{CB}=-30\text{V}$ $V_{CB}=-30\text{V}, T_{amb}=100^\circ\text{C}$	
Emitter Cut-Off Current	$I_{EBO}$			-0.1	$\mu\text{A}$	$V_{EB}=-4\text{V}$	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-0.15 -0.30 -0.40	-0.25 -0.45 -0.75	V V V	$I_C=-500\text{mA}, I_B=-5\text{mA}^*$ $I_C=-1\text{A}, I_B=-10\text{mA}^*$ $I_C=-2\text{A}, I_B=-50\text{mA}^*$	
				-0.8	-1.0	V	$I_C=-1\text{A}, I_B=-10\text{mA}^*$
				-0.75		V	$I_C=-1\text{A}, V_{CE}=-2\text{V}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-0.75		V	$I_C=-1\text{A}, V_{CE}=-2\text{V}^*$	
Static Forward Current Transfer Ratio	$h_{FE}$	300 250 200 150		800		$I_C=-10\text{mA}, V_{CE}=-2\text{V}$ $I_C=-500\text{mA}, V_{CE}=-2\text{V}^*$ $I_C=-1\text{A}, V_{CE}=-2\text{V}^*$ $I_C=-2\text{A}, V_{CE}=-2\text{V}^*$	
Transition Frequency	$f_T$	100			MHz	$I_C=-50\text{mA}, V_{CE}=-5\text{V}$ $f=50\text{MHz}$	
Output Capacitance	$C_{obo}$		24		pF	$V_{CB}=-10\text{V}, f=1\text{MHz}$	
Switching Times	$t_{on}$ $t_{off}$		35 600		ns ns	$I_C=-500\text{mA},$ $I_{B1}=-50\text{mA},$ $I_{B2}=-50\text{mA}, V_{CC}=-10\text{V}$	

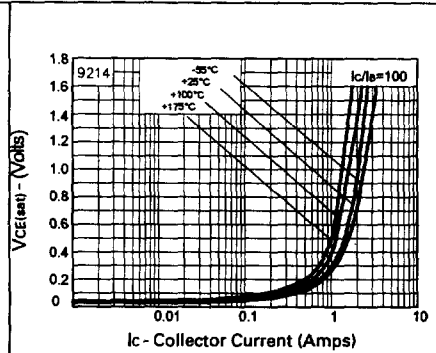
\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$   
Spice parameter data is available upon request for this device

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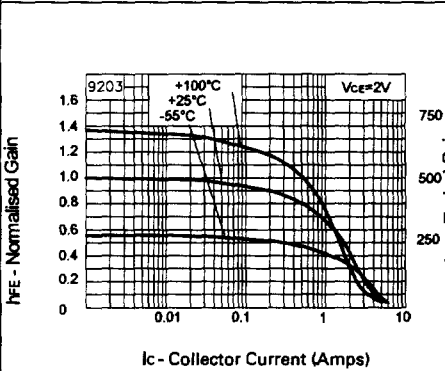
## TYPICAL CHARACTERISTICS



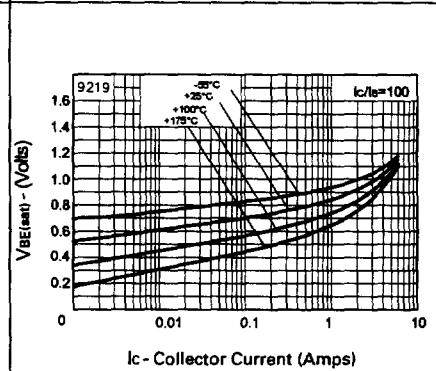
VCE(sat) v IC



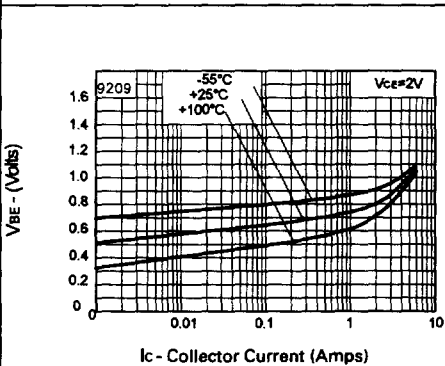
VCE(sat) v IC



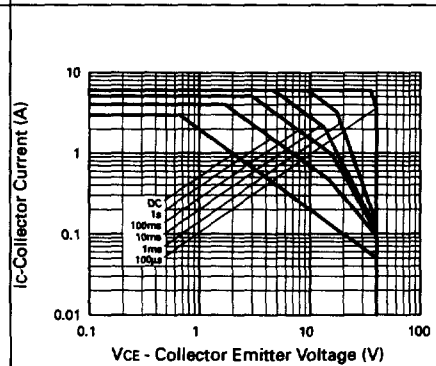
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area