

SOT223 NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

FZT696B

ISSUE 4 – FEBRUARY 1997

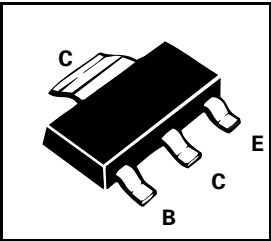
FEATURES

- * 250 Volt V_{CEO}
- * Gain of 500 at $I_C=100mA$
- * Very low saturation voltage

APPLICATIONS

- * Darlington replacement
- * Battery powered circuits

PARTMARKING DETAIL – FZT696B



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	180	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	1	A
Continuous Collector Current	I_C	0.5	A
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	2	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

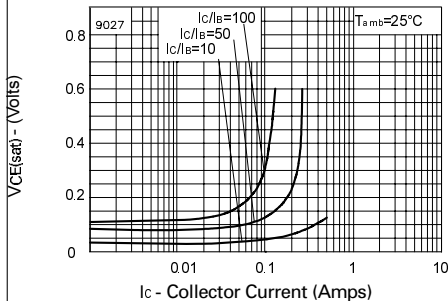
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	180			V	$I_C=100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	180			V	$I_C=10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=100\mu A$
Collector Cut-Off Current	I_{CBO}			0.1	μA	$V_{CB}=140V$
Emitter Cut-Off Current	I_{EBO}			0.1	μA	$V_{EB}=4V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.2 0.2 0.25	V V V	$I_C=50mA, I_B=0.5mA^*$ $I_C=100mA, I_B=2mA^*$ $I_C=200mA, I_B=5mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			0.9	V	$I_C=200mA, I_B=5mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			0.9	V	$I_C=200mA, V_{CE}=5V^*$
Static Forward Current Transfer Ratio	h_{FE}	500 150				$I_C=100mA, V_{CE}=5V^*$ $I_C=200mA, V_{CE}=5V^*$
Transition Frequency	f_T	70			MHz	$I_C=50mA, V_{CE}=5V$ $f=50MHz$
Input Capacitance	C_{ibo}		200		pF	$V_{EB}=0.5V, f=1MHz$
Output Capacitance	C_{obo}		6		pF	$V_{CE}=10V, f=1MHz$
Switching Times	t_{on} t_{off}		80 4400		ns ns	$I_C=100mA, I_{B1}=10mA$ $I_{B2}=10mA, V_{CC}=50V$

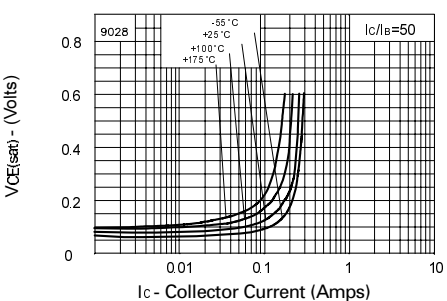
*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$
Spice parameter data is available upon request for this device

FZT696B

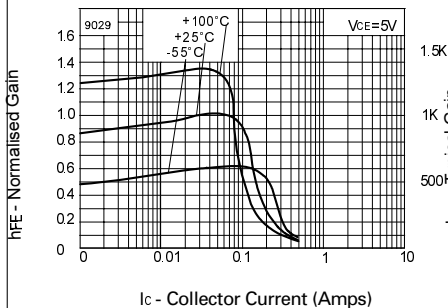
TYPICAL CHARACTERISTICS



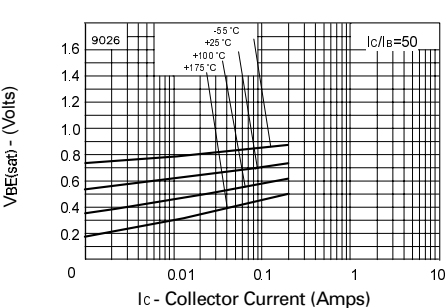
VCE(sat) v IC



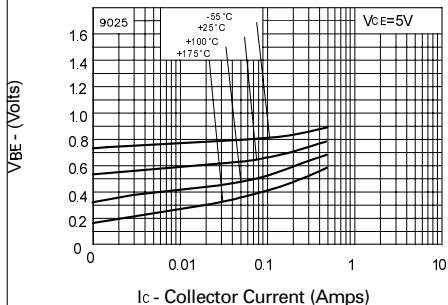
VCE(sat) v IC



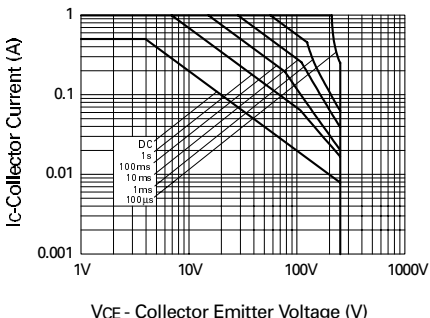
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area