SOT223 NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

FZT688B

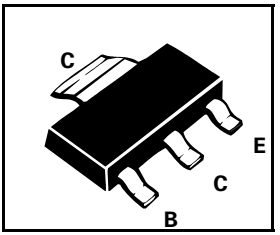
ISSUE 3 - OCTOBER 1995

FEATURES

* Extremely low equivalent on resistance; **$R_{CE(sat)}$ 83mΩ at 3A**
* Gain of 400 at I_C=3 Amps and very low saturation voltage

APPLICATIONS

* Flash gun convertors & Battery powered circuits



PARTMARKING DETAIL – FZT688B
COMPLEMENTARY TYPE - FZT788B

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	12	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	10	A
Continuous Collector Current	I_C	4	A
Power Dissipation at T_{amb}=25°C	P_{tot}	2	W
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Breakdown Voltages	$V_{(BR)CBO}$	12			V	I_C=100μA
	$V_{(BR)CEO}$	12			V	I_C=10mA*
	$V_{(BR)EBO}$	5			V	I_E=100μA
Collector Cut-Off Current	I_{CBO}			0.1	μA	V_{CB}=10V
Emitter Cut-Off Current	I_{EBO}			0.1	μA	V_{EB}=4V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.04 0.06 0.18 0.35 0.40	V V V V V	I_C=0.1A, I_B=1mA I_C=0.1A,I_B=0.5mA* I_C=1A, I_B=50mA* I_C=3A, I_B=20mA* I_C=4A, I_B=50mA*
Base-Emitter SaturationVoltage	$V_{BE(sat)}$			1.1	V	I_C=3A, I_B=20mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			1.0	V	I_C=3A, V_{CE}=2V
Static Forward Current Transfer Ratio	h_{FE}	500 400 100				I_C=0.1A, V_{CE}=2V* I_C=3A, V_{CE}=2V* I_C=10A, V_{CE}=2V*
Transition Frequency	f_T	150			MHz	I_C=50mA,V_{CE}=5V f=50MHz
Input Capacitance	C_{ibo}		200		pF	V_{EB}=0.5Vf=1MHz
Output Capacitance	C_{obo}		40		pF	V_{CB}=10V,f=1MHz
Switching Times	t_{on} t_{off}		40 500		ns ns	I_C=500mA, I_{B1}=50A I_{B2}=50mA, V_{CC}=10V

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

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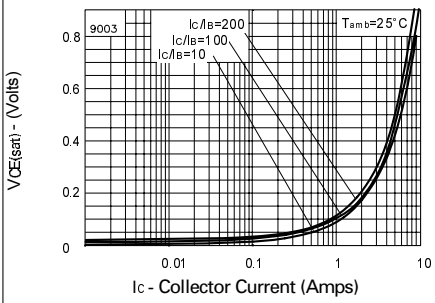
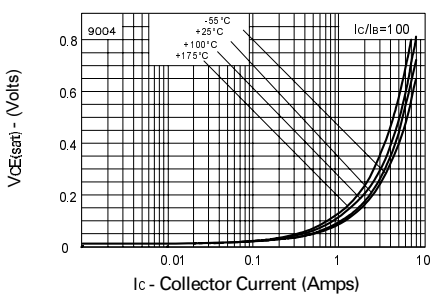
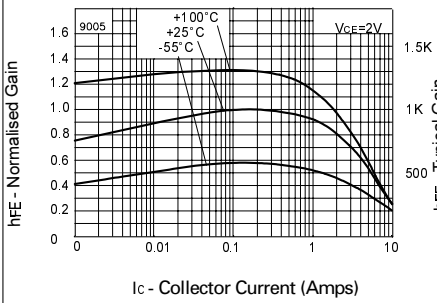
TYPICAL CHARACTERISTICS



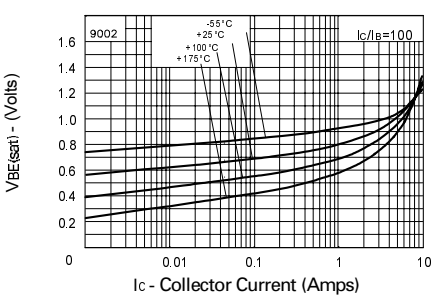
VCE(sat) v IC



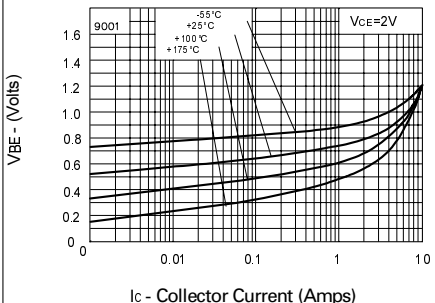
VCE(sat) v IC



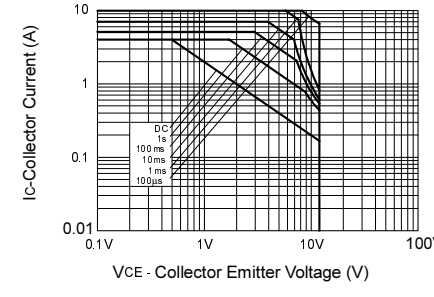
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area