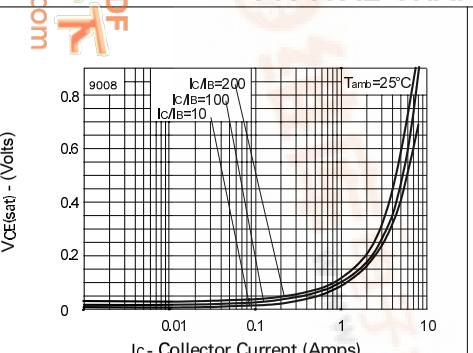
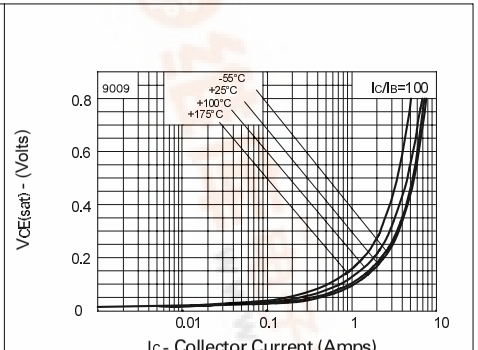
FZT689B

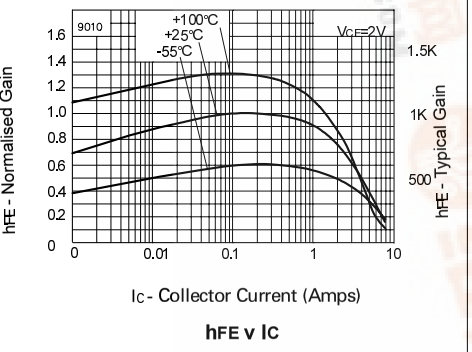
TYPICAL CHARACTERISTICS



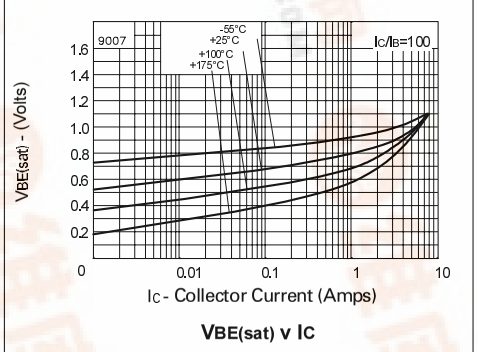
VCE(sat) v IC



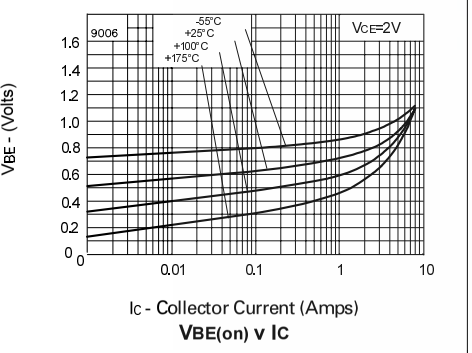
VCE(sat) v IC



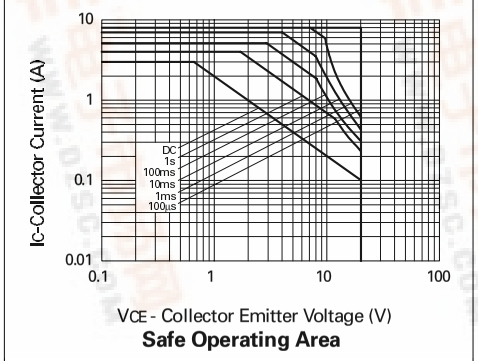
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area

SOT223 NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

FZT689B

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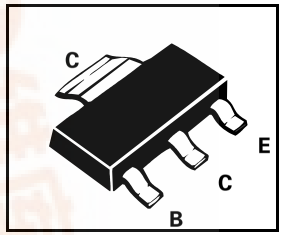

FEATURES

* Gain of 400 at I_C=2 Amps and low saturation voltage
* Extremely low equivalent on-resistance; **$R_{CE(sat)}$ 92mΩ at 3A**

APPLICATIONS

* Darlington replacement
* Flash gun convertors and Battery powered circuits

PARTMARKING DETAIL - FZT689B

COMPLEMENTARY TYPE - FZT789B

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	20	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°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 Voltage Collector-Base	$V_{(BR)CBO}$	20			V	I_C=100µA
Collector-Emitter	$V_{(BR)CEO}$	20			V	I_C=10mA*
Emitter-Base	$V_{(BR)EBO}$	5			V	I_E=100µA
Collector Cut-Off Current	I_{CBO}			0.1	µA	V_{CB}=16V
Emitter Cut-Off Current	I_{EBO}			0.1	µA	V_{EB}=4V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.10 0.50 0.45	V V V	I_C=0.1A, I_B=0.5mA* I_C=2A, I_B=10mA* I_C=3A, I_B=20mA*
Base-EmitterSaturationVoltage	$V_{BE(sat)}$			0.9	V	I_C=1A, I_B=10mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			0.9	V	I_C=1A, V_{CE}=2V*
Static Forward Current Transfer Ratio	h_{FE}	500 400 150				I_C=0.1A, V_{CE}=2V* I_C=2A, V_{CE}=2V* I_C=6A, 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}=0.5V, f=1MHz
Output Capacitance	C_{obo}		16		pF	V_{CB}=10V, f=1MHz
Switching Times	t_{on} t_{off}		30 800		ns ns	I_C=500mA,I_{B1}=50mA 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

SOT223 NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

FZT689B

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FEATURES

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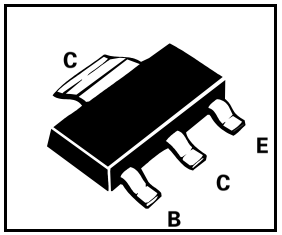
* Flash gun convertors and Battery powered circuits

PARTMARKING DETAIL - FZT689B

COMPLEMENTARY TYPE - FZT789B



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Base-EmitterSaturationVoltage	$V_{BE(sat)}$			0.9	V	I_C=1A, I_B=10mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			0.9	V	I_C=1A, V_{CE}=2V*
Static Forward Current Transfer Ratio	h_{FE}	500 400 150				I_C=0.1A, V_{CE}=2V* I_C=2A, V_{CE}=2V* I_C=6A, 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}=0.5V, f=1MHz
Output Capacitance	C_{obo}		16		pF	V_{CB}=10V, f=1MHz
Switching Times	t_{on} t_{off}		30 800		ns ns	I_C=500mA,I_{B1}=50mA I_{B2}=50mA, V_{CC}=10V

*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤2%

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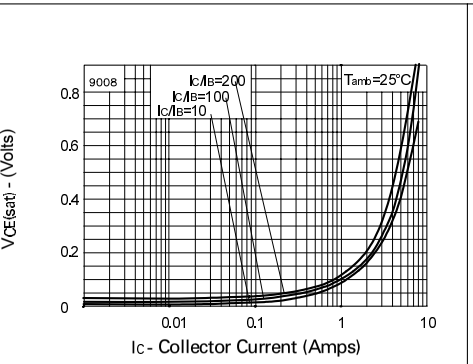
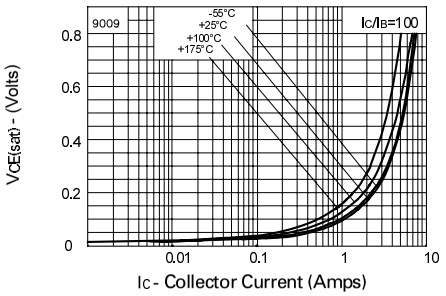
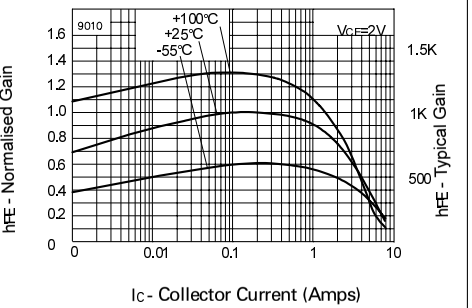
TYPICAL CHARACTERISTICS



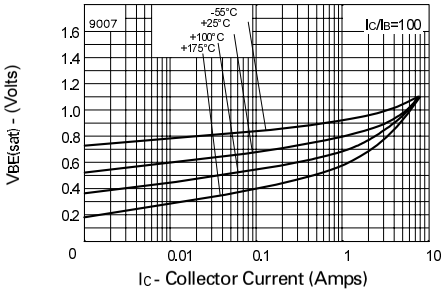
VCE(sat) v IC



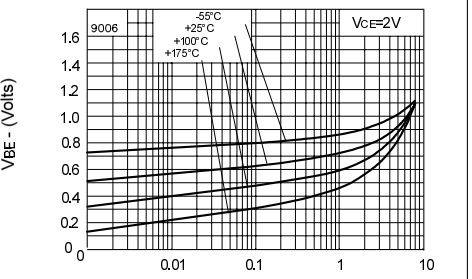
VCE(sat) v IC



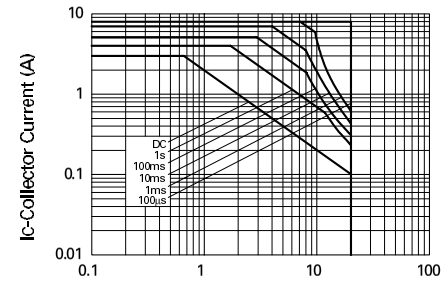
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area