THE DATASHEET OF

FZT956TA

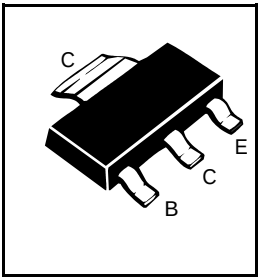
SOT223 PNP SILICON PLANAR HIGH CURRENT (HIGH PERFORMANCE) TRANSISTORS

FZT955
FZT956

ISSUE 3 – MARCH 2005

FEATURES

* 4 Amps continuous current (10 Amps peak current)
* Very low saturation voltages
* Excellent gain characteristics specified up to 3 Amps



PARTMARKING DETAILS – DEVICE TYPE IN FULL
COMPLEMENTARY TYPES – FZT955 - FZT855
FZT956 - N/A

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	FZT955	FZT956	UNIT
Collector-Base Voltage	V_{CBO}	-180	-220	V
Collector-Emitter Voltage	V_{CEO}	-140	-200	V
Emitter-Base Voltage	V_{EBO}	-6		V
Peak Pulse Current	I_{CM}	-10	-5	A
Continuous Collector Current	I_C	-4	-2	A
Power Dissipation at T_{amb}=25°C	P_{tot}	3		W
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150		°C

*The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 4 square inch minimum

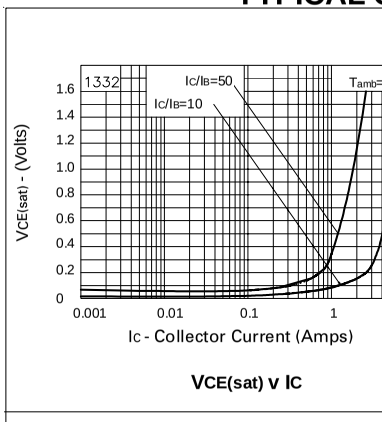
FZT955

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

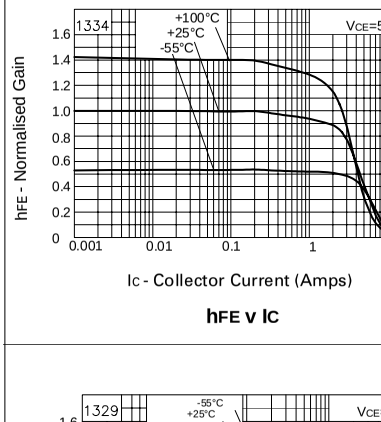
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-180	-210		V	I_C=-100μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	-180	-210		V	I_C=-1μA, RB ≤1kΩ
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-140	-170		V	I_C=-10mA*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6	-8		V	I_E=-100μA
Collector Cut-Off Current	I_{CBO}			-50 -1	nA μA	V_{CB}=-150V V_{CB}=-150V,T_{amb}=100°C
Collector Cut-Off Current	I_{CER} R ≤1kΩ			-50 -1	nA μA	V_{CB}=-150V V_{CB}=-150V,T_{amb}=100°C
Emitter Cut-Off Current	I_{EBO}			-10	nA	V_{EB}=-6V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-30 -70 -110 -275	-60 -120 -150 -370	mV mV mV mV	I_C=-100mA, I_B=-5mA* I_C=-500mA,I_B=-50mA* I_C=-1A, I_B=-100mA* I_C=-3A, I_B=-300mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-970	-1110	mV	I_C=-3A, I_B=-300mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-830	-950	mV	I_C=-3A, V_{CE}=-5V*
Static Forward Current Transfer Ratio	h_{FE}	100 100 75	200 200 140 10	300		I_C=-10mA, V_{CE}=-5V* I_C=-1A, V_{CE}=-5V* I_C=-3A, V_{CE}=-5V* I_C=-10A, V_{CE}=-5V*
Transition Frequency	f_T		110		MHz	I_C=-100mA, V_{CE}=-10V f=50MHz
Output Capacitance	C_{obo}		40		pF	V_{CB}=-20V, f=1MHz
Switching Times	t_{on} t_{off}		68 1030		ns ns	I_C=-1A, I_{B1}=-100mA I_{B2}=100mA, V_{CC}=-50V

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

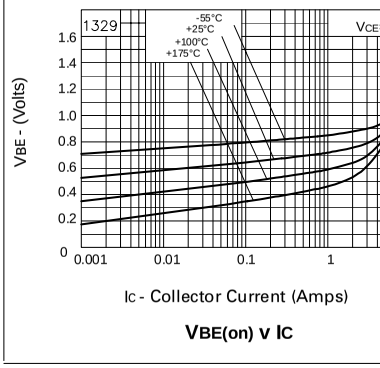
TYPICAL C



VCE(sat) v IC



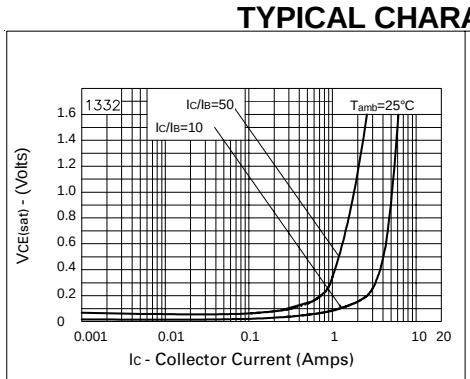
hFE v IC



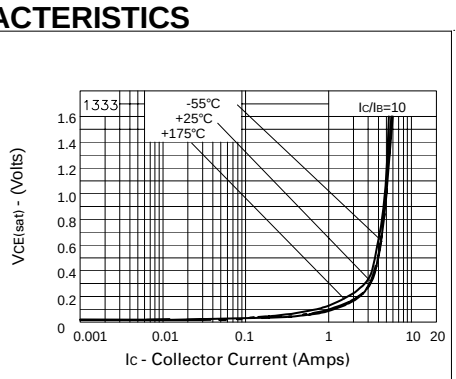
VBE(on) v IC

FZT955

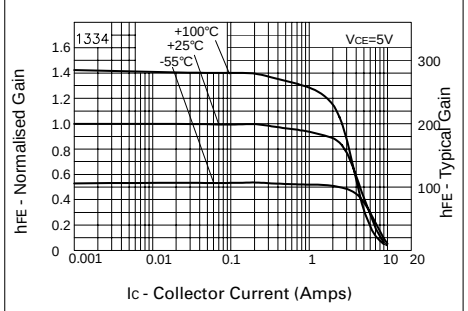
TYPICAL CHARACTERISTICS



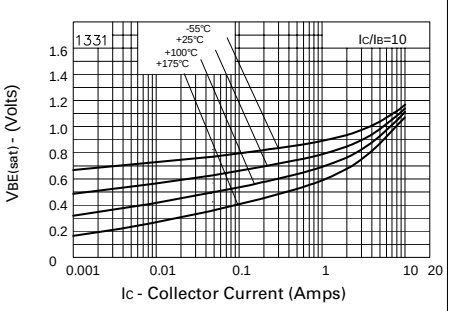
VCE(sat) v IC



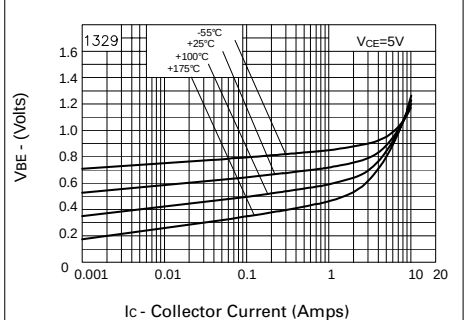
VCE(sat) v IC



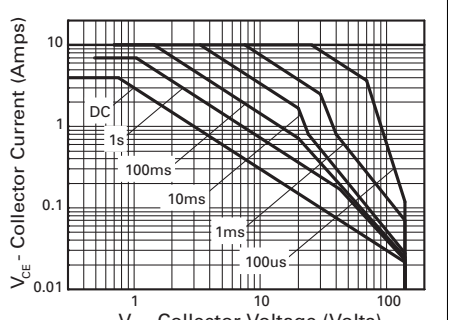
hFE v IC



V **BE(sat) v IC**



VBE(on) v IC



Safe Operating Area

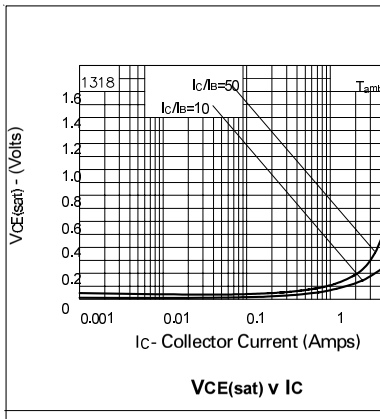
FZT956

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

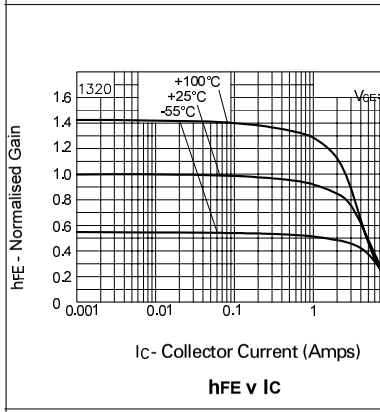
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-220	-300		V	I_C=-100μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	-220	-300		V	I_C=-1μA, RB ≤1kΩ
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-200	-240		V	I_C=-10mA*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6	-8		V	I_E=-100μA
Collector Cut-Off Current	I_{CBO}			-50 -1	nA μA	V_{CB}=-200V V_{CB}=-200V,T_{amb}=100°C
Collector Cut-Off Current	I_{CER} R ≤1kΩ			-50 -1	nA μA	V_{CB}=-200V V_{CB}=-200V,T_{amb}=100°C
Emitter Cut-Off Current	I_{EBO}			-10	nA	V_{EB}=-6V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-30 -120 -168	-50 -165 -275	mV mV mV	I_C=-100mA,I_B=-10mA* I_C=-1A, I_B=-100mA* I_C=-2A, I_B=-400mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-970	-1110	mV	I_C=-2A, I_B=-400mA
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-810	-950	mV	I_C=-2A, V_{CE}=-5V*
Static Forward Current Transfer Ratio	h_{FE}	100 100 50	200 200 150 10	300		I_C=-10mA, V_{CE}=-5V* I_C=-1A, V_{CE}=-5V* I_C=-2A, V_{CE}=-5V* I_C=-5A, V_{CE}=-5V*
Transition Frequency	f_T		110		MHz	I_C=-100mA, V_{CE}=-10V f=50MHz
Output Capacitance	C_{obo}		32		pF	V_{CB}=-20V, f=1MHz
Switching Times	t_{on} t_{off}		67 1140		ns ns	I_C=-1A, I_{B1}=-100mA I_{B2}=100mA, V_{CC}=-50V

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

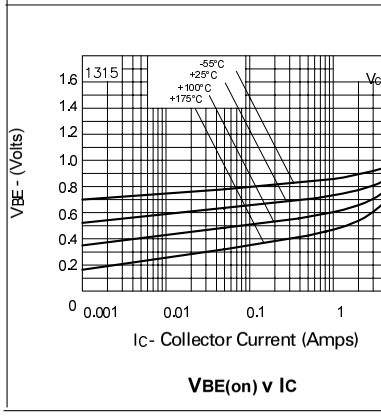
TYPICAL



VCE(sat) v IC



hFE v IC



VBE(on) v IC

FZT956

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-220	-300		V	I_C=-100μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	-220	-300		V	I_C=-1μA, RB ≤1kΩ
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-200	-240		V	I_C=-10mA*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6	-8		V	I_E=-100μA
Collector Cut-Off Current	I_{CBO}			-50 -1	nA μA	V_{CB}=-200V V_{CB}=-200V,T_{amb}=100°C
Collector Cut-Off Current	I_{CER} R ≤1kΩ			-50 -1	nA μA	V_{CB}=-200V V_{CB}=-200V,T_{amb}=100°C
Emitter Cut-Off Current	I_{EBO}			-10	nA	V_{EB}=-6V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-30 -120 -168	-50 -165 -275	mV mV mV	I_C=-100mA,I_B=-10mA* I_C=-1A, I_B=-100mA* I_C=-2A, I_B=-400mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-970	-1110	mV	I_C=-2A, I_B=-400mA
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-810	-950	mV	I_C=-2A, V_{CE}=-5V*
Static Forward Current Transfer Ratio	h_{FE}	100 100 50	200 200 150 10	300		I_C=-10mA, V_{CE}=-5V* I_C=-1A, V_{CE}=-5V* I_C=-2A, V_{CE}=-5V* I_C=-5A, V_{CE}=-5V*
Transition Frequency	f_T		110		MHz	I_C=-100mA, V_{CE}=-10V f=50MHz
Output Capacitance	C_{obo}		32		pF	V_{CB}=-20V, f=1MHz
Switching Times	t_{on} t_{off}		67 1140		ns ns	I_C=-1A, I_{B1}=-100mA I_{B2}=100mA, V_{CC}=-50V

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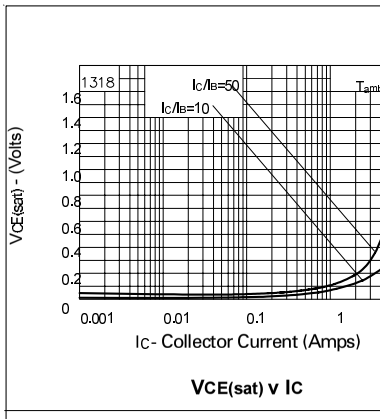
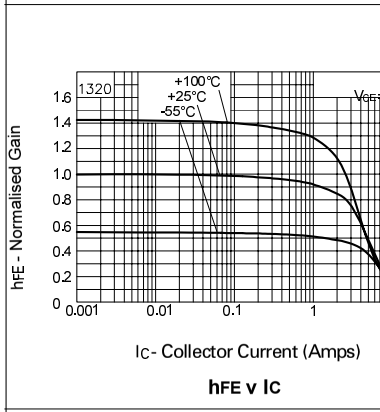
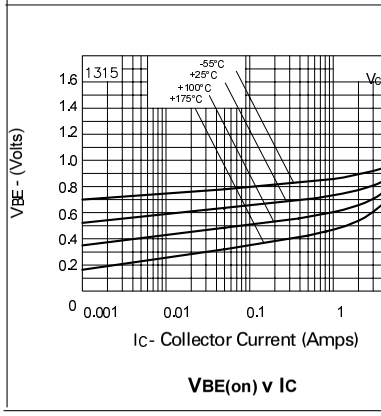


VCE(sat) v IC



hFE v IC



VBE(on) v IC

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