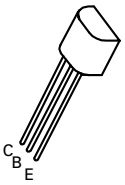
PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ZTX1149A

ISSUE 1 - January 1997

FEATURES

* V_{CEO} = - 25V
* 3 Amp Continuous Current
* 10 Amp Pulse Current
* Low Saturation Voltage
* High Gain



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	ZTX1149A	UNIT
Collector-Base Voltage	V_{CBO}	-30	V
Collector-Emitter Voltage	V_{CEO}	-25	V
Emitter-Base Voltage	V_{EBO}	-5	V
Peak Pulse Current	I_{CM}	-10	A
Continuous Collector Current	I_C	-3	A
Base Current	I_B	-500	mA
Power Dissipation at T_{amb}=25°C	P_{tot}	1	W
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +200	°C

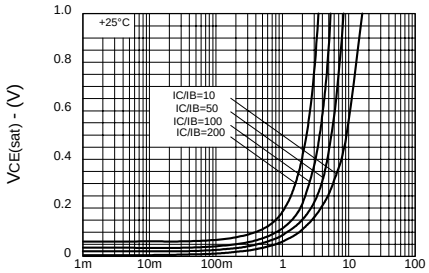
ZTX1149A

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

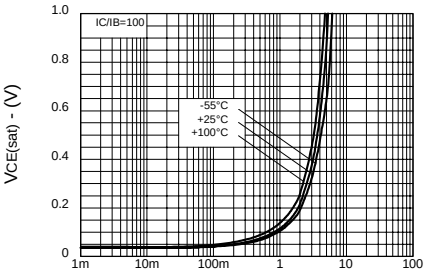
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-30	-70		V	I_C=-100μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	-25	-60		V	I_C=-100μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-25	-60		V	I_C=-10mA *
Collector-Emitter Breakdown Voltage	$V_{(BR)CEV}$	-25	-60		V	I_C=-100μA, V_{EB}=+1V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-8.5		V	I_E=-100μA
Collector Cut-Off Current	I_{CBO}		-0.3	-100	nA	V_{CB}=-24V
Emitter Cut-Off Current	I_{EBO}		-0.3	-100	nA	V_{EB}=-4V
Collector Emitter Cut-Off Current	I_{CES}		-0.3	-100	nA	V_{CE}=-20V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-45 -100 -140 -170 -200	-80 -170 -240 -260 -300	mV mV mV mV mV	I_C=-0.1A, I_B=-1.0mA* I_C=-0.5A, I_B=-3mA* I_C=-1A, I_B=-7mA* I_C=-2A, I_B=-30mA* I_C=-3A, I_B=-70mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-870	-1000	mV	I_C=-3A, I_B=-70mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-800	-900	mV	I_C=-3A, V_{CE}=-2V*
Static Forward Current Transfer Ratio	h_{FE}	270 250 195 115	450 400 320 190 50	800		I_C=-10mA, V_{CE}=-2V* I_C=-0.5A, V_{CE}=-2V* I_C=-2A, V_{CE}=-2V* I_C=-5A, V_{CE}=-2V* I_C=-10A, V_{CE}=-2V*
Transition Frequency	f_T		135		MHz	I_C=-50mA, V_{CE}=-10V f=50MHz
Output Capacitance	C_{cb}		50		pF	V_{CB}=- 10V, f= 1MHz
Switching Times	t_{on}		150		ns	I_C=-4A, I_B=-40mA, V_{CC}=-10V
	t_{off}		270		ns	I_C=-4A, I_B=±40mA, V_{CC}=-10V

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

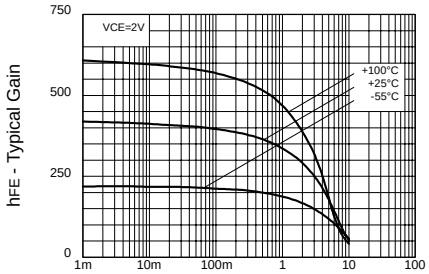
TYPICAL CHARACTERISTICS



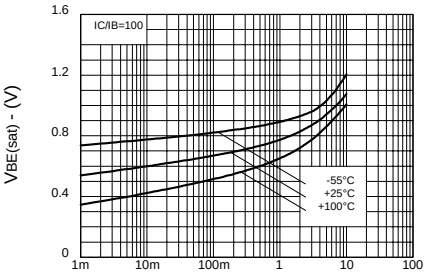
VCE(sat) v IC



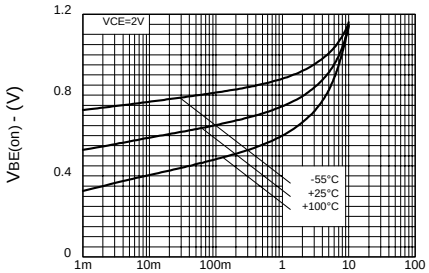
VCE(sat) v IC



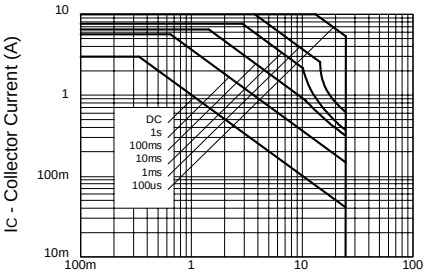
hFE v IC



VBE(sat) v IC

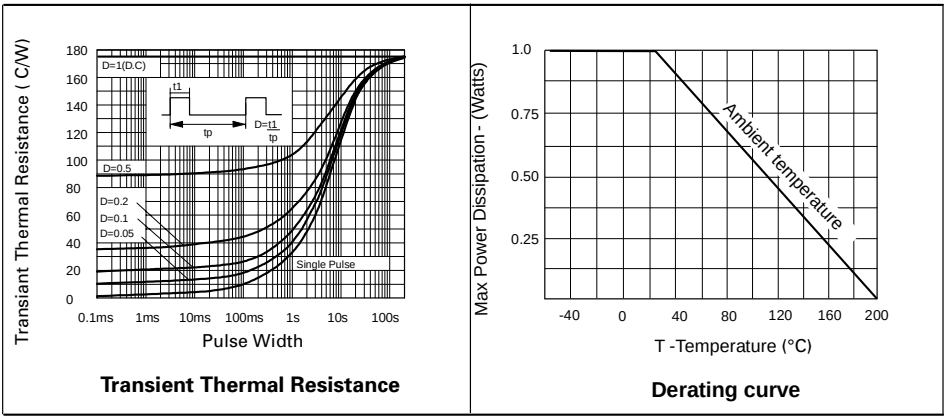


VBE(on) v IC



Safe Operating Area

ZTX1149A



Transient Thermal Resistance

Derating curve

*ZETEX ZTX1149 Spice model Last revision 10/1/97

*

.MODEL ZTX1149 PNP IS =9.5e-13 NF=1.002 ISE=1.2e-13 NE =1.4 BF =520

+ VAF=24.97 IKF=5 NR =0.997 ISC=4.5E-13 NC =1.25

+ BR = 40 VAR=2.51 IKR=0.7 RE =20e-3 RB =150e-3

+ RC =10e-3 CJE=490e-12 CJC=150e-12 VJC=1.094

+ MJC= 0.4739 TF =1e-9 TR = 3.5e-9

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