

ZTX955

**PNP SILICON PLANAR MEDIUM POWER HIGH CURRENT TRANSISTOR**

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ISSUE 3 – JUNE 94

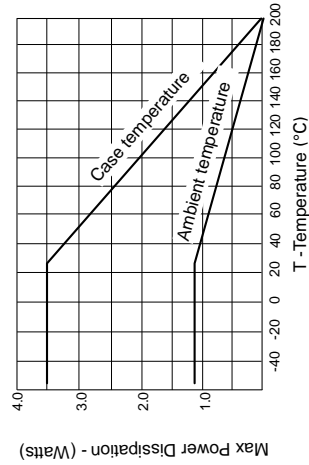
**ELECTRICAL CHARACTERISTICS (at T<sub>amb</sub> = 25°C)**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Base-Emitter Turn-On Voltage	V <sub>BE(on)</sub>		-790	-900	mV	I <sub>C</sub> =-3A, V <sub>CE</sub> =-5V*
Static Forward Current Transfer Ratio	h <sub>FE</sub>	100	200	300		I <sub>C</sub> =-10mA, V <sub>CE</sub> =-5V*
		100	200			I <sub>C</sub> =-1A, V <sub>CE</sub> =-5V*
		75	140			I <sub>C</sub> =-3A, V <sub>CE</sub> =-5V*
			10			I <sub>C</sub> =-10A, V <sub>CE</sub> =-5V*
Transition Frequency	f <sub>T</sub>		110		MHz	I <sub>C</sub> =-100mA, V <sub>CE</sub> =-10V, f=50MHz
Output Capacitance	C <sub>obo</sub>		40		pF	V <sub>CE</sub> =-20V, f=1MHz
Switching Times	t <sub>on</sub>		68		ns	I <sub>C</sub> =-1A, I <sub>B</sub> F=-100mA
	t <sub>off</sub>		1030		ns	I <sub>B</sub> F=-100mA, V <sub>CE</sub> =-50V

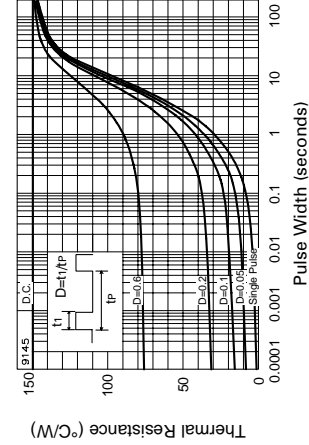
\*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤2%

**THERMAL CHARACTERISTICS**

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient Junction to Case	R <sub>th(j-amb)</sub>	150	°C/W
	R <sub>th(j-case)</sub>	50	°C/W



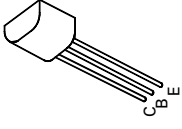
**Derating curve**



**Maximum transient thermal impedance**

**FEATURES**

- \* 3 Amps continuous current
- \* Up to 10 Amps peak current
- \* Very low saturation voltage
- \* Excellent gain characteristics up to 3 Amps
- \* Spice model available



E-Line  
TO92 Compatible

**ABSOLUTE MAXIMUM RATINGS.**

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	-180	V
Collector-Emitter Voltage	V <sub>CE0</sub>	-140	V
Emitter-Base Voltage	V <sub>EBO</sub>	-6	V
Peak Pulse Current	I <sub>CM</sub>	-10	A
Continuous Collector Current	I <sub>C</sub>	-3	A
Practical Power Dissipation*	P <sub>totp</sub>	1.58	W
Power Dissipation at T <sub>amb</sub> =25°C	P <sub>tot</sub>	1.2	W
Operating and Storage Temperature Range	T <sub>J</sub> ; T <sub>stg</sub>	-55 to +200	°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 1 inch square minimum

**ELECTRICAL CHARACTERISTICS (at T<sub>amb</sub> = 25°C unless otherwise stated)**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	-180	-210		V	I <sub>C</sub> =-100μA
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEr</sub>	-180	-210		V	I <sub>C</sub> =-1μA, R <sub>B</sub> ≤ 1KΩ
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	-140	-170		V	I <sub>C</sub> =-10mA*
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	-6	-8		V	I <sub>E</sub> =-100μA
Collector Cut-Off Current	I <sub>CBO</sub>			-50	nA	V <sub>CB</sub> =-150V
				-1	μA	V <sub>CB</sub> =-150V, T <sub>amb</sub> =100°C
Collector Cut-Off Current	I <sub>GER</sub> R ≤ 1KΩ			-50	nA	V <sub>CB</sub> =-150V
				-1	μA	V <sub>CB</sub> =-150V, T <sub>amb</sub> =100°C
Emitter Cut-Off Current	I <sub>EBO</sub>			-10	nA	V <sub>EB</sub> =-6V
				-60	mV	I <sub>C</sub> =-100mA, I <sub>B</sub> =-5mA*
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>			-100	mV	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA*
				-90	mV	I <sub>C</sub> =-1A, I <sub>B</sub> =-100mA*
				-250	mV	I <sub>C</sub> =-3A, I <sub>B</sub> =-300mA*
				-1050	mV	I <sub>C</sub> =-3A, I <sub>B</sub> =-300mA*
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>				mV	

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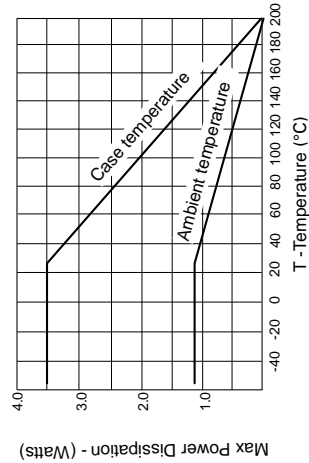
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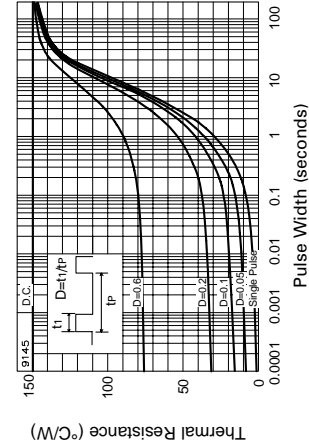
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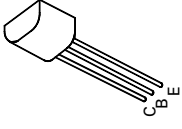
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Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	-6	-8		V	I <sub>E</sub> =-100µA
Collector Cut-Off Current	I <sub>CBO</sub>			-50	nA	V <sub>CB</sub> =-150V, T <sub>amb</sub> =100°C
				-1	µA	V <sub>CB</sub> =-150V, T <sub>amb</sub> =100°C
Collector Cut-Off Current	I <sub>CEr</sub>			-50	nA	V <sub>CB</sub> =-150V
	R <sub>≤1KΩ</sub>			-1	µA	V <sub>CB</sub> =-150V, T <sub>amb</sub> =100°C
Emitter Cut-Off Current	I <sub>EBO</sub>			-10	nA	V <sub>EB</sub> =-6V
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	-30			mV	I <sub>C</sub> =-100mA, I <sub>B</sub> =-5mA*
		-60			mV	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA*
		-90			mV	I <sub>C</sub> =-1A, I <sub>B</sub> =-100mA*
		-120			mV	I <sub>C</sub> =-100mA, I <sub>B</sub> =-100mA*
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	-250			mV	I <sub>C</sub> =-3A, I <sub>B</sub> =-300mA*
		-920			mV	I <sub>C</sub> =-3A, I <sub>B</sub> =-300mA*

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## TYPICAL CHARACTERISTICS

