

ZTX968

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

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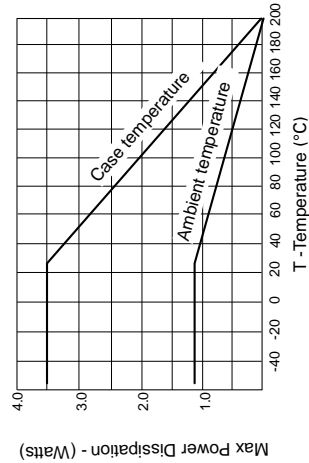
**ELECTRICAL CHARACTERISTICS (at T<sub>amb</sub> = 25°C)**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Static Forward Current Transfer Ratio	h <sub>FE</sub>	300	450	1000		I <sub>C</sub> =10mA, V <sub>CE</sub> =1V*
		300	450			I <sub>C</sub> =500mA, V <sub>CE</sub> =1V*
		200	300			I <sub>C</sub> =5A, V <sub>CE</sub> =1V*
		150	240			I <sub>C</sub> =10A, V <sub>CE</sub> =1V*
		50	50			I <sub>C</sub> =20A, V <sub>CE</sub> =1V*
Transition Frequency	f <sub>T</sub>	80			MHz	I <sub>C</sub> =100mA, V <sub>CE</sub> =10V f=50MHz
Output Capacitance	C <sub>ob0</sub>		161		pF	V <sub>CE</sub> =20V, f=1MHz
Switching Times	t <sub>on</sub> t <sub>off</sub>	120			ns	I <sub>C</sub> =4A, I <sub>B</sub> =400mA
		116			ns	I <sub>BZ</sub> =400mA, V <sub>CC</sub> =10V

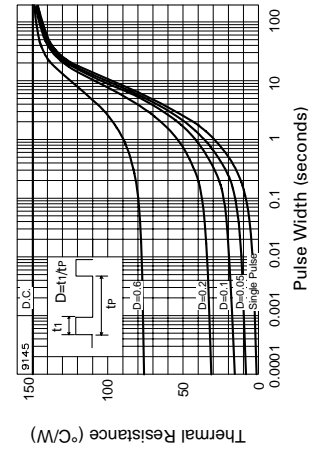
\*Measured under pulsed conditions. Pulse width=300µs. Duty cycle ≤2%

**THERMAL CHARACTERISTICS**

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



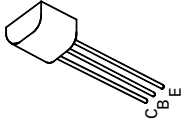
**Derating curve**



**Maximum transient thermal impedance**

**FEATURES**

- \* 4.5 Amps continuous current
- \* Up to 20 Amps peak current
- \* Very low saturation voltage
- \* High gain
- \* Spice model available



E-Line  
TO92 Compatible

**ABSOLUTE MAXIMUM RATINGS.**

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	-15	V
Collector-Emitter Voltage	V <sub>CE0</sub>	-12	V
Emitter-Base Voltage	V <sub>EB0</sub>	-6	V
Peak Pulse Current	I <sub>CM</sub>	-20	A
Continuous Collector Current	I <sub>C</sub>	-4.5	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>	-15	-28		V	I <sub>C</sub> =100µA
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	-12	-20		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> =12V
				-1	µA	V <sub>CB</sub> =12V, T <sub>amb</sub> =100°C
Emitter Cut-Off Current	I <sub>EBO</sub>			-10	nA	V <sub>EB</sub> =6V
				-50	mV	I <sub>C</sub> =500mA, I <sub>B</sub> =5mA*
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>		-100		mV	I <sub>C</sub> =2A, I <sub>B</sub> =50mA*
			-220		mV	I <sub>C</sub> =5A, I <sub>B</sub> =200mA*
			-1050		mV	I <sub>C</sub> =5A, I <sub>B</sub> =200mA*
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>		-830		mV	I <sub>C</sub> =5A, V <sub>CE</sub> =1V*

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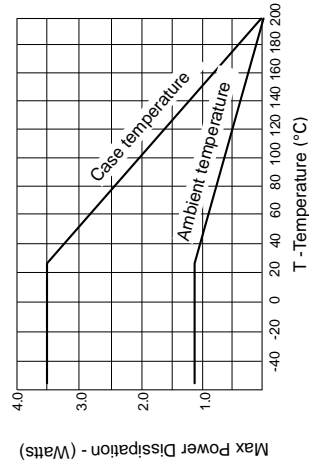
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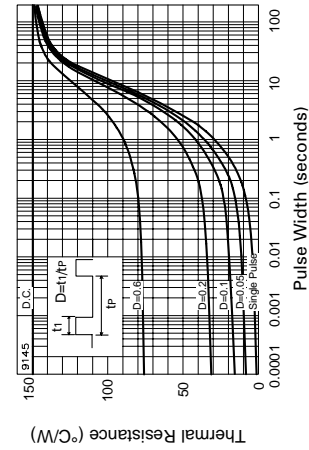
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Thermal Resistance: Junction to Case	R <sub>th(j-case)</sub>	50	°C/W



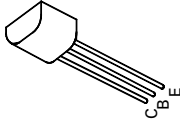
**Derating curve**



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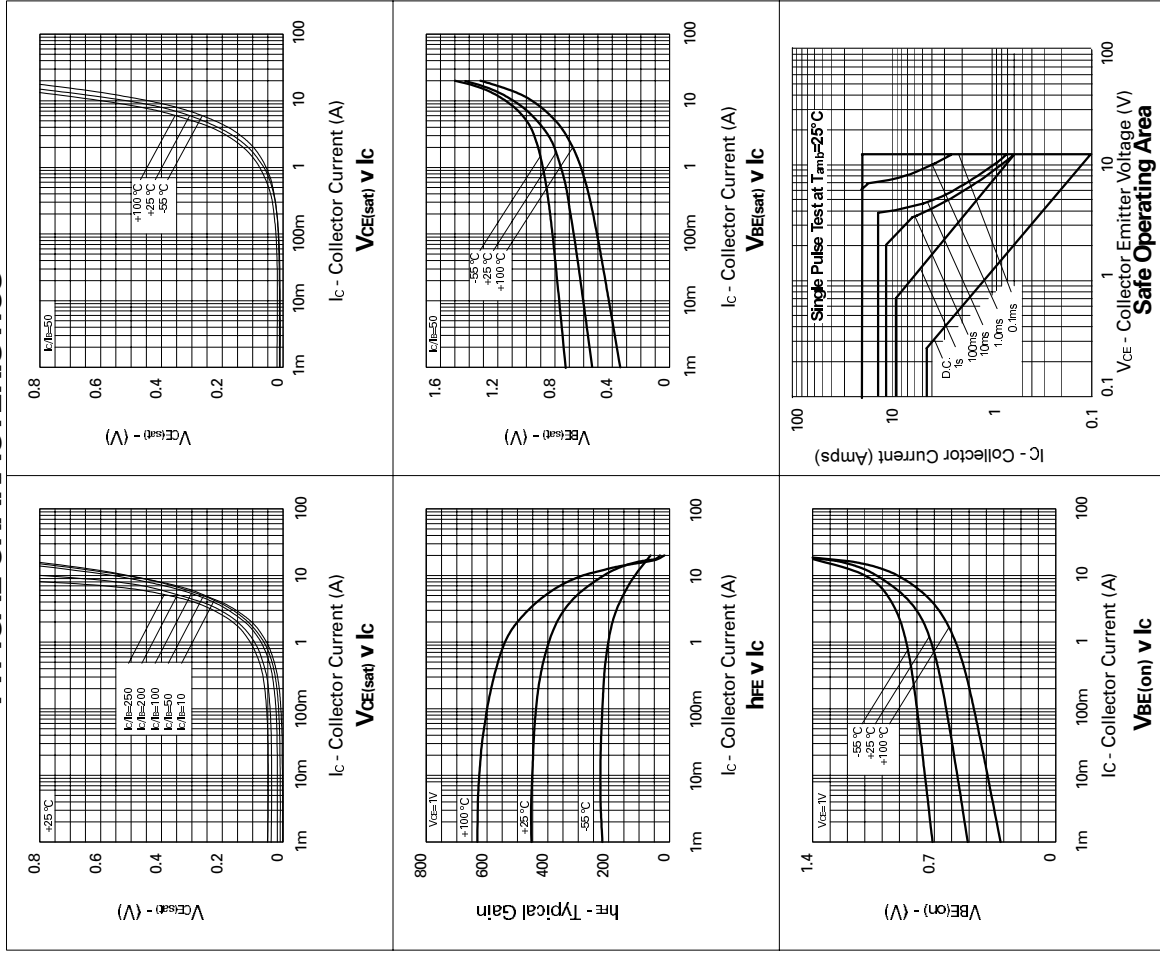
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Collector Cut-Off Current	I <sub>CBO</sub>			-50	nA	V <sub>CB</sub> =12V
				-1	µA	V <sub>CB</sub> =12V, T <sub>amb</sub> =100°C
Emitter Cut-Off Current	I <sub>EBO</sub>			-10	nA	V <sub>EB</sub> =6V
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>		-50	-100	mV	I <sub>C</sub> =500mA, I <sub>B</sub> =5mA*
			-100	-150	mV	I <sub>C</sub> =2A, I <sub>B</sub> =50mA*
			-220	-300	mV	I <sub>C</sub> =5A, I <sub>B</sub> =200mA*
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>		-930	-1050	mV	I <sub>C</sub> =5A, I <sub>B</sub> =200mA*
Base-Emitter Turn-On Voltage	V <sub>BE(on)</sub>		-830	-1000	mV	I <sub>C</sub> =5A, V <sub>CE</sub> =1V*

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### TYPICAL CHARACTERISTICS



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