



# ZTX869

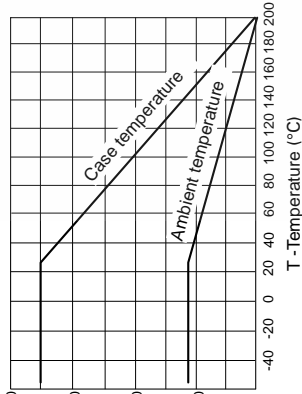
## ELECTRICAL CHARACTERISTICS (at T<sub>amb</sub> = 25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Base-Emitter Turn-On Voltage	V <sub>BE(on)</sub>		800	900	mV	I <sub>C</sub> =5A, V <sub>CE</sub> =1V*
Static Forward Current Transfer Ratio	h <sub>FE</sub>	300	450			I <sub>C</sub> =10mA, V <sub>CE</sub> =1V
		300	450			I <sub>C</sub> =1A, V <sub>CE</sub> =1V*
		250	400			I <sub>C</sub> =5A, V <sub>CE</sub> =1V*
		40	100			I <sub>C</sub> =20A, V <sub>CE</sub> =1V*
Transition Frequency	f <sub>T</sub>		100		MHz	I <sub>C</sub> =100mA, V <sub>CE</sub> =10V, f=50MHz
Output Capacitance	C <sub>obo</sub>		70		pF	V <sub>CE</sub> =10V, f=1MHz
Switching Times	t <sub>on</sub>		60		ns	I <sub>C</sub> =1A, I <sub>B</sub> =100mA, V <sub>CE</sub> =10V
	t <sub>off</sub>		680		ns	I <sub>B</sub> =100mA, V <sub>CE</sub> =10V

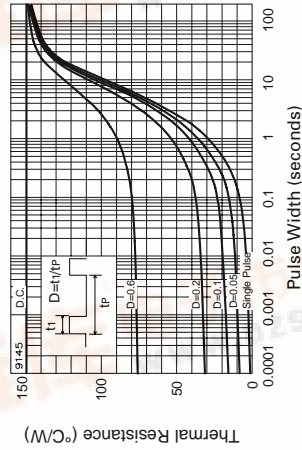
Measured under pulsed conditions. Pulse width=300µs. Duty cycle ≤2%

## HERMAL 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



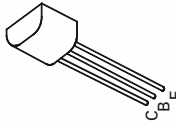
Maximum transient thermal impedance

# NPN SILICON PLANAR MEDIUM POWER HIGH CURRENT TRANSISTOR

ISSUE 1 - APRIL 94

## FEATURES

- \* 25 Volt V<sub>CEO</sub>
- \* 5 Amps continuous current
- \* Up to 20 Amps peak current
- \* Very low saturation voltage
- \* High Gain
- \* P<sub>tot</sub>=1.2 Watts



E-Line  
TO92 Compatible

## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	25	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Peak Pulse Current	I <sub>CM</sub>	20	A
Continuous Collector Current	I <sub>C</sub>	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>	60	120		V	I <sub>C</sub> =100µA
Collector-Emitter Breakdown Voltage	V <sub>(BR)CE</sub>	60	120		V	I <sub>C</sub> =1µA, R <sub>B</sub> ≤ 1KΩ
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	25	35		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>CE</sub> =50V, T <sub>amb</sub> =100°C
Collector Cut-Off Current	I <sub>CE</sub>			50	µA	V <sub>CE</sub> =50V, T <sub>amb</sub> =100°C
Collector Cut-Off Current	I <sub>CE</sub>			50	nA	V <sub>CE</sub> =50V, 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>	25	25	50	mV	I <sub>C</sub> =0.5A, I <sub>B</sub> =10mA*
		50	50	80	mV	I <sub>C</sub> =1A, I <sub>B</sub> =10mA*
		100	100	200	mV	I <sub>C</sub> =2A, I <sub>B</sub> =100mA*
		180	180	220	mV	I <sub>C</sub> =5A, I <sub>B</sub> =100mA*
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>		880	950	mV	I <sub>C</sub> =5A, I <sub>B</sub> =100mA*

查询ZTX869供应商

捷多邦, 专业PCB打样工厂, 24小时加急出货

ZTX869

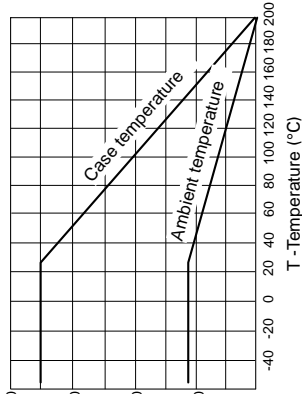
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Transition Frequency	f <sub>T</sub>		100		MHz	I <sub>C</sub> =100mA, V <sub>CE</sub> =10V f=50MHz
Output Capacitance	C <sub>ob0</sub>		70		pF	V <sub>CE</sub> =10V, f=1MHz
Switching Times	t <sub>on</sub> t <sub>off</sub>		60		ns	I <sub>C</sub> =1A, I <sub>B</sub> =100mA
			680		ns	I <sub>B</sub> =100mA, V <sub>CE</sub> =10V

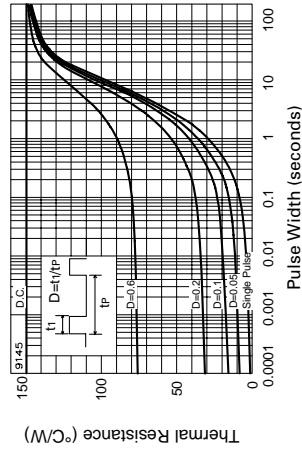
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**Derating curve**



**Maximum transient thermal impedance**

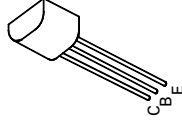
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Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	6	8		V	I <sub>E</sub> =100µA
Collector Cut-Off Current	I <sub>CBO</sub>			50 1	nA µA	V <sub>CB</sub> =50V V <sub>CB</sub> =50V, T <sub>amb</sub> =100°C
Collector Cut-Off Current	I <sub>CE</sub> R <sub>I</sub> ≤1KΩ			50 1	nA µA	V <sub>CB</sub> =50V V <sub>CB</sub> =50V, 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>		25	50	mV	I <sub>C</sub> =0.5A, I <sub>B</sub> =10mA*
			50	80	mV	I <sub>C</sub> =1A, I <sub>B</sub> =10mA*
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Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>		880	950	mV	I <sub>C</sub> =5A, I <sub>B</sub> =100mA*

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## TYPICAL CHARACTERISTICS

