



THE DATASHEET OF ZTX869



ZTX869

NPN SILICON PLANAR MEDIUM POWER HIGH CURRENT TRANSISTOR

ISSUE 1 – APRIL 94

FEATURES

- * 25 Volt V_{CE0}
- * 5 Amps continuous current
- * Up to 20 Amps peak current
- * Very low saturation voltage
- * High Gain
- * $P_{tot}=1.2$ Watts

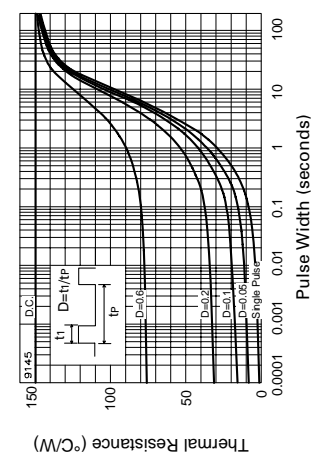
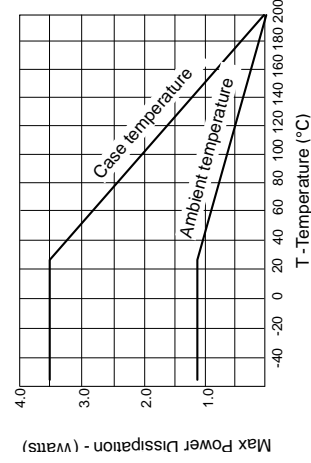
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		800	900	mV	$I_C=5A, V_{CE}=1V^*$
Static Forward Current Transfer Ratio	h_{FE}	300	450			$I_C=10mA, V_{CE}=1V$
		300	450			$I_C=1A, V_{CE}=1V^*$
		250	400			$I_C=5A, V_{CE}=1V^*$
		40	100			$I_C=20A, V_{CE}=1V^*$
Transition Frequency	f_T		100		MHz	$I_C=100mA, V_{CE}=10V, f=50MHz$
Output Capacitance	C_{obo}		70		pF	$V_{CB}=10V, f=1MHz$
Switching Times	t_{on}		60		ns	$I_C=1A, I_B=100mA$
	t_{off}		680		ns	$I_B=100mA, V_{CC}=10V$

*Measured under pulsed conditions. Pulse width=300 μ s. Duty cycle \leq 2%

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient Junction to Case	$R_{th(j-amb)}$ $R_{th(j-case)}$	150 50	$^{\circ}C/W$ $^{\circ}C/W$



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL
Collector-Base Voltage	$V_{(BR)CBO}$
Collector-Emitter Voltage	$V_{(BR)CEO}$
Emitter-Base Voltage	$V_{(BR)EBO}$
Peak Pulse Current	I_{CBO}
Continuous Collector Current	I_{CER}
Practical Power Dissipation*	$R \leq 1K\Omega$
Power Dissipation at $T_{amb}=25^{\circ}C$	I_{EBO}
Operating and Storage Temperature Range	$V_{CE(sat)}$

*The power which can be dissipated as a P.C.B. with copper equal to 1 inch square.

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$
Collector Cut-Off Current	I_{CBO}
Collector Cut-Off Current	I_{CER}
Emitter Cut-Off Current	I_{EBO}
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$

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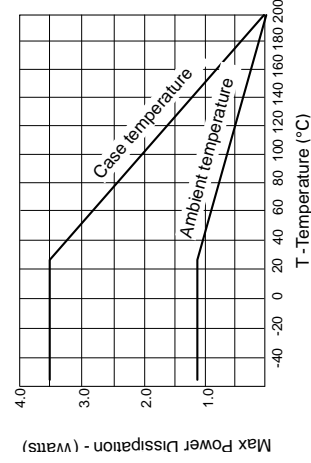
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$)

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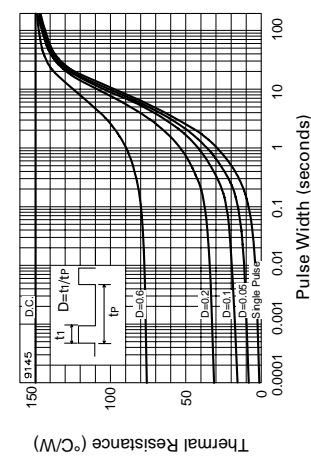
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THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient	$R_{th(j-amb)}$	150	$^{\circ}C/W$
Junction to Case	$R_{th(j-case)}$	50	$^{\circ}C/W$



Derating curve



Maximum transient thermal impedance

ABSOLUTE MAXIMUM RATINGS

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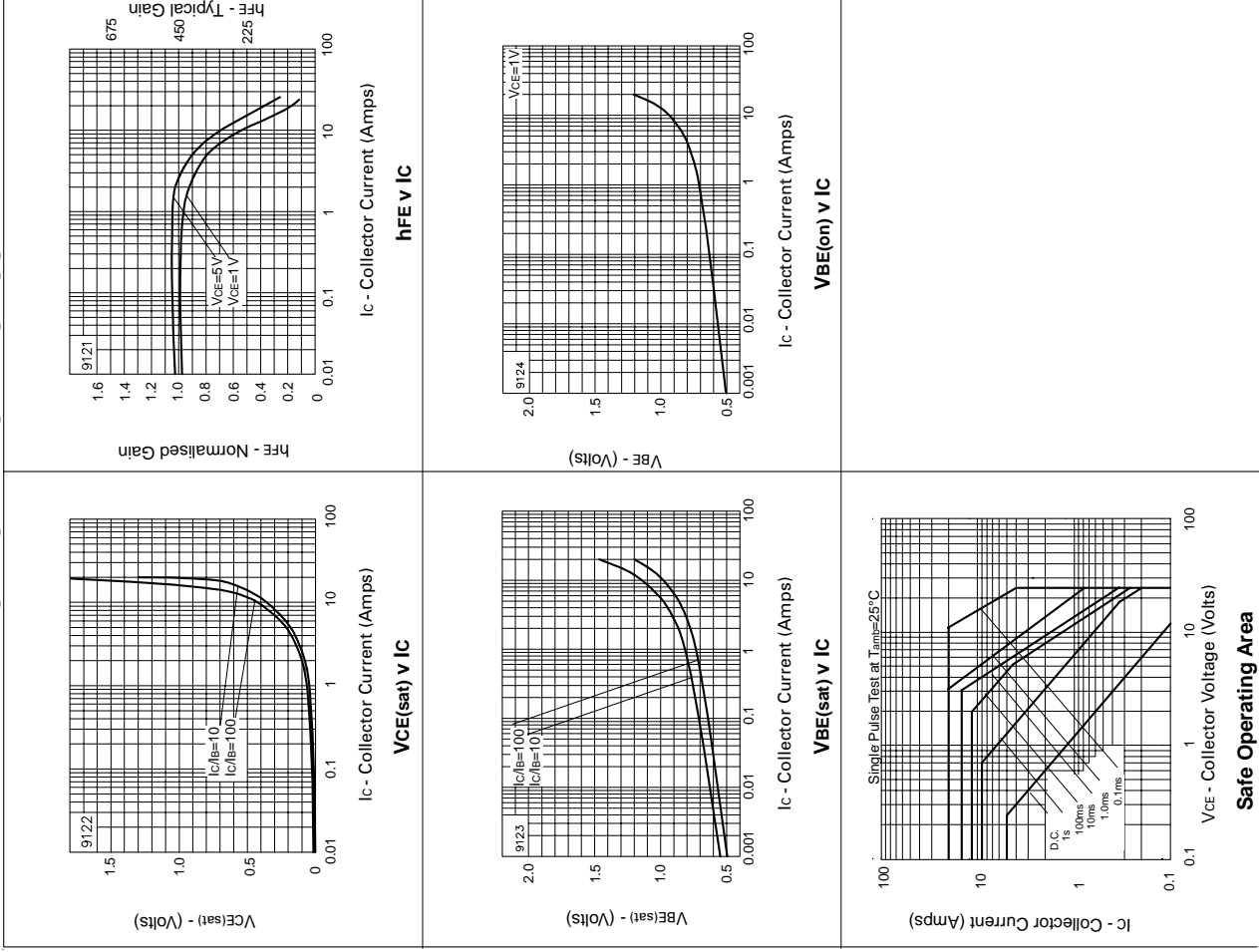
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Collector Cut-Off Current	I_{CBO}
Collector Cut-Off Current	I_{CER}
Emitter Cut-Off Current	I_{EBO}
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$



ZTX869

TYPICAL CHARACTERISTICS



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