



THE DATASHEET OF ZTX851STZ



ZTX851

NPN SILICON PLANAR ME HIGH CURRENT TRANSIS

ISSUE 2 – AUGUST 94

FEATURES

- * 60 Volt V_{CE0}
 - * 5 Amps continuous current
 - * Up to 20 Amps peak current
 - * Very low saturation voltage
 - * $P_{tot}=1.2$ Watts
- APPLICATIONS
- * Emergency lighting circuits

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		840	950	mV	$I_C=4A, V_{CE}=1V^*$
Static Forward Current Transfer Ratio	h_{FE}	100	200	300		$I_C=10mA, V_{CE}=1V$
		100	200			$I_C=2A, V_{CE}=1V^*$
		75	120			$I_C=5A, V_{CE}=1V^*$
		25	50			$I_C=10A, V_{CE}=1V^*$
Transition Frequency	f_T		130		MHz	$I_C=100mA, V_{CE}=10V, f=50MHz$
Output Capacitance	C_{obo}		45		pF	$V_{CB}=10V, f=1MHz$
Switching Times	t_{on}		45		ns	$I_C=1A, I_B=100mA$
	t_{off}		1100		ns	$I_B=100mA, V_{CE}=10V$

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

THERMAL CHARACTERISTICS

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

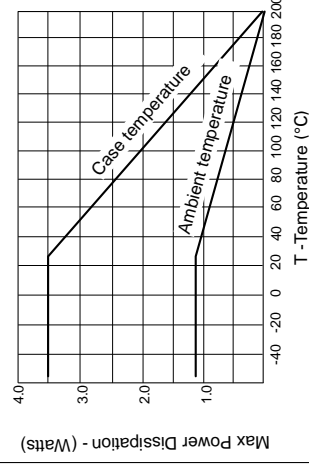
ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL
Collector-Base Voltage	V_{CB0}
Collector-Emitter Voltage	V_{CE0}
Emitter-Base Voltage	V_{EB0}
Peak Pulse Current	I_{CP}
Continuous Collector Current	I_C
Practical Power Dissipation*	P_{tot}
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}
Operating and Storage Temperature Range	T_{amb}

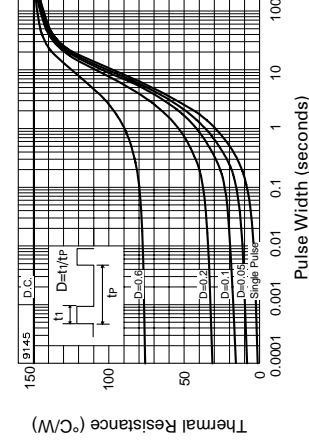
*The power which can be dissipated as a function of ambient temperature is shown on P.C.B. with copper equal to 1 inch square.

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$
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	$V_{BE(sat)}$



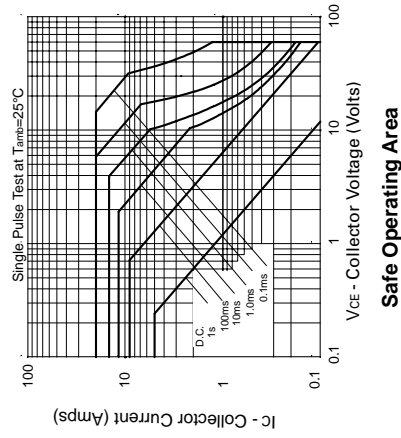
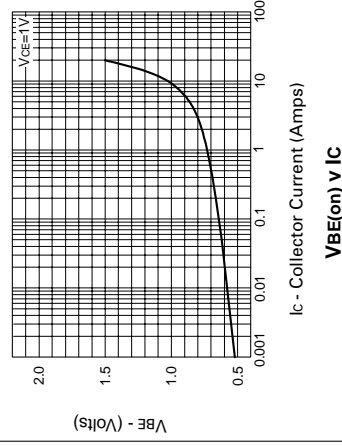
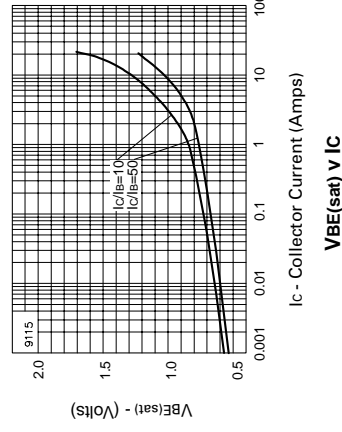
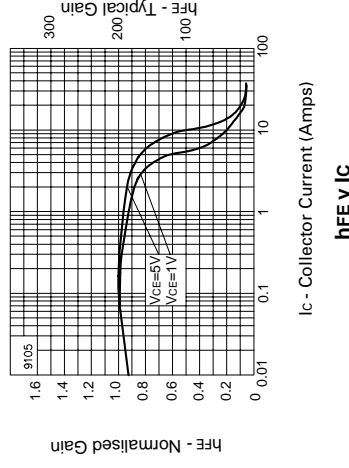
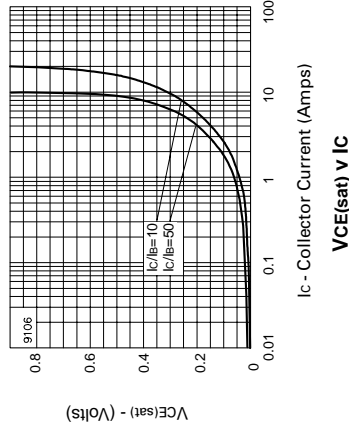
Derating curve



Maximum transient thermal impedance



ZTX851

TYPICAL CHARACTERISTICS



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