



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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NPN SILICON PLANAR MEDIUM POWER HIGH CURRENT TRANSISTOR

ISSUE 2 – AUGUST 94

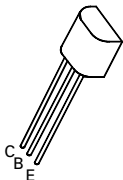
ZTX851

FEATURES

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

APPLICATIONS

- * Emergency lighting circuits



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	150	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	6	V
Peak Pulse Current	I_{CM}	20	A
Continuous Collector Current	I_C	5	A
Practical Power Dissipation*	P_{totp}	1.58	W
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	1.2	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	$^{\circ}C$

*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 $T_{amb} = 25^{\circ}C$ unless otherwise stated)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	150	220		V	$I_C=100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	150	220		V	$I_C=1\mu A, R_B \leq 1K\Omega$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	60	85		V	$I_C=10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	8		V	$I_E=100\mu A$
Collector Cut-Off Current	I_{CBO}			50 1	nA μA	$V_{CB}=120V$ $V_{CB}=120V, T_{amb}=100^{\circ}C$
Collector Cut-Off Current	I_{CER} $R \leq 1K\Omega$			50 1	nA μA	$V_{CB}=120V$ $V_{CB}=120V, T_{amb}=100^{\circ}C$
Emitter Cut-Off Current	I_{EBO}			10	nA	$V_{EB}=6V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		10 50 100 200	50 100 150 250	mV mV mV mV	$I_C=0.1A, I_B=5mA^*$ $I_C=1A, I_B=50mA^*$ $I_C=2A, I_B=50mA^*$ $I_C=5A, I_B=200mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		920	1050	mV	$I_C=4A, I_B=200mA^*$

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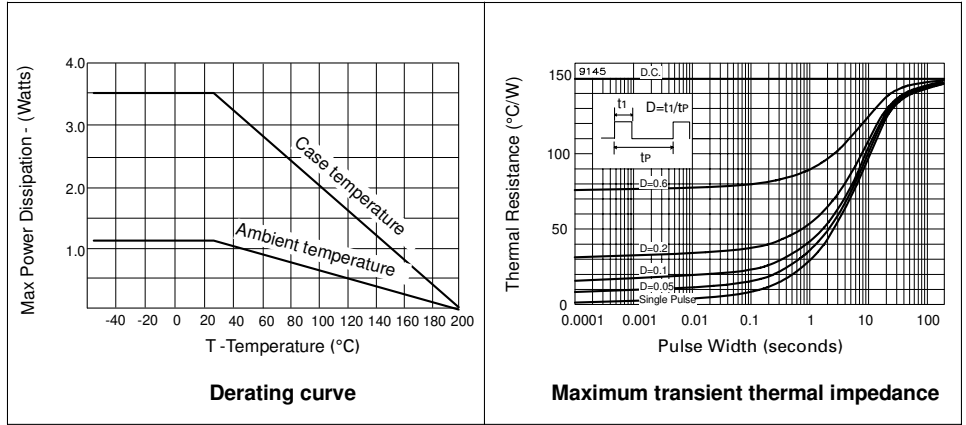
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$)

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}	100 100 75 25	200 200 120 50	300		$I_C=10mA, V_{CE}=1V$ $I_C=2A, V_{CE}=1V^*$ $I_C=5A, V_{CE}=1V^*$ $I_C=10A, V_{CE}=1V^*$
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} t_{off}		45 1100		ns	$I_C=1A, I_B=100mA$ $I_{B2}=100mA, V_{CC}=10V$

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

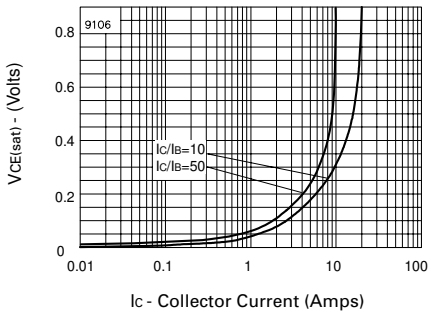
THERMAL CHARACTERISTICS

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

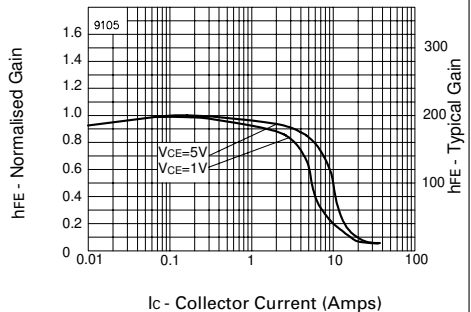


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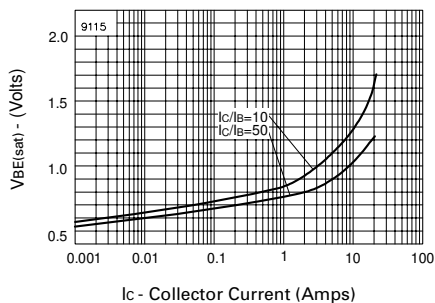
TYPICAL CHARACTERISTICS



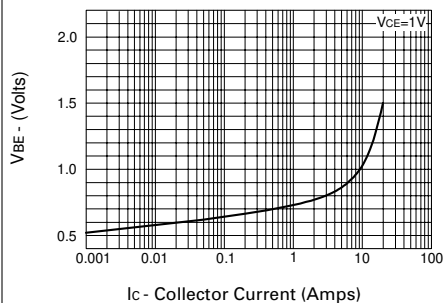
$V_{CE(sat)}$ v I_C



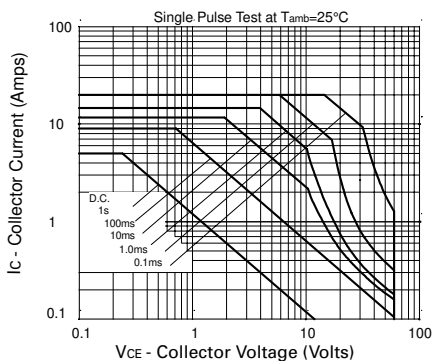
hFE v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



Safe Operating Area