# THE DATASHEET OF

# ZTX857

# ZTX857

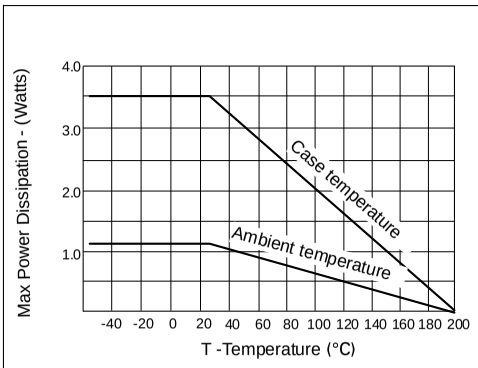
## ELECTRICAL CHARACTERISTICS (at $T_{amb}$ = 25°C)

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---|---|---|---|---|---|---|
| Base-Emitter Turn-On Voltage | $V_{BE(on)}$ | | 810 | 950 | mV | IC=2A, $V_{CE}$=5V* |
| Static Forward Current Transfer Ratio | $h_{FE}$ | 100<br>100<br>15 | 200<br>200<br>25<br>15 | 300 | | $I_C$=10mA, $V_{CE}$=5V<br>$I_C$=500mA, $V_{CE}$=10V*<br>$I_C$=2A, $V_{CE}$=10V*<br>$I_C$=3A, $V_{CE}$=10V* |
| Transition Frequency | $f_T$ | | 80 | | MHz | $I_C$=100mA, $V_{CE}$=10V f=100MHz |
| Output Capacitance | $C_{obo}$ | | 11 | | pF | $V_{CB}$=20V, f=1MHz |
| Switching Times | $t_{on}$<br>$t_{off}$ | | 100<br>5300 | | ns<br>ns | $I_C$=250mA, $I_{B1}$=25mA<br>$I_{B2}$=25mA, $V_{CC}$=50V |

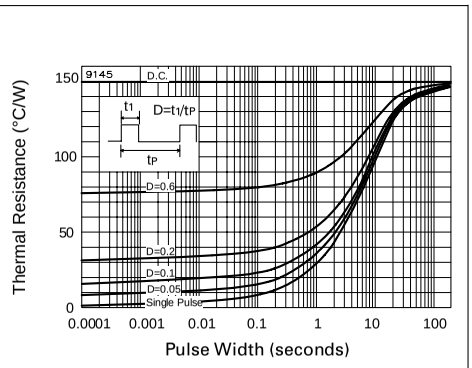
*Measured under pulsed conditions. Pulse width=300µs. Duty cycle ≤2%

## THERMAL CHARACTERISTICS

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




**Derating curve**




**Maximum transient thermal impedance**



# NPN SILICON PLANAR ME
# HIGH CURRENT TRANSIST

**ISSUE 1 – APRIL 94**

FEATURES

* 300 Volt $V_{CEO}$
* 3 Amps continuous current
* Up to 5 Amps peak current
* Very low saturation voltage
* $P_{tot}$= 1.2 Watt

## ABSOLUTE MAXIMUM RATINGS

| PARAMETER |
|---|
| Collector-Base Voltage |
| Collector-Emitter Voltage |
| Emitter-Base Voltage |
| Peak Pulse Current |
| Continuous Collector Current |
| Practical Power Dissipation* |
| Power Dissipation at $T_{amb}$=25°C |
| Operating and Storage Temperature Ran |

*The power which can be dissipated ass
P.C.B. with copper equal to 1 inch squar

## ELECTRICAL CHARACTERISTICS

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| Collector-Emitter Breakdown Voltag | $V_{(BR)CER}$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ |
| Collector Cut-Off Current | $I_{CBO}$ |
| Collector Cut-Off Current | $I_{CER}$<br>R ≤1KΩ |
| Emitter Cut-Off Current | $I_{EBO}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ |

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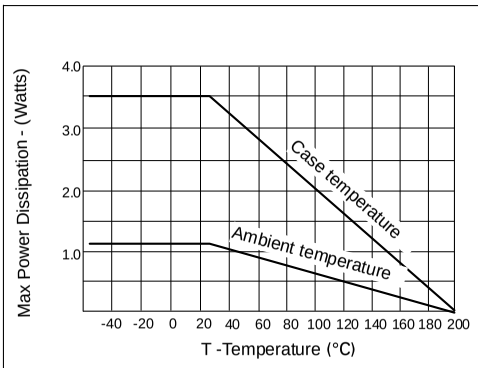


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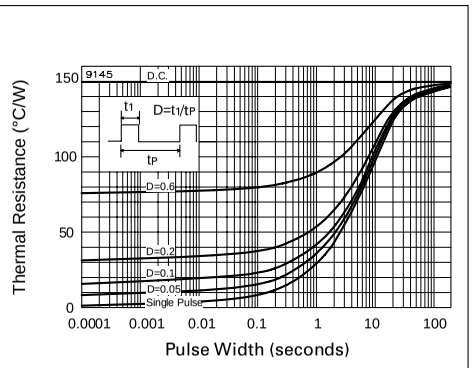


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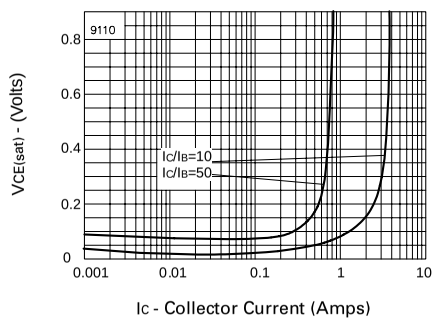
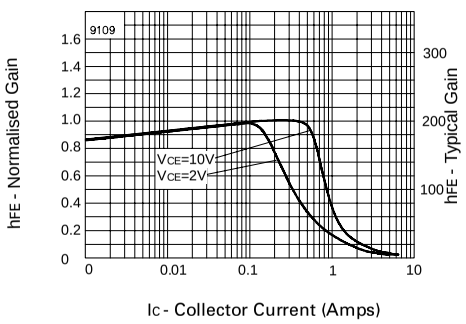
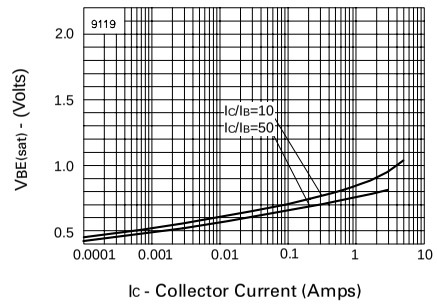
## TYPICAL CHARACTERISTICS



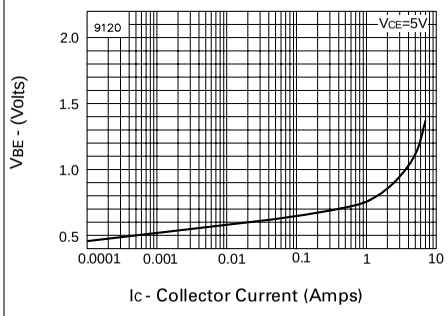

**VCE(sat) v IC**



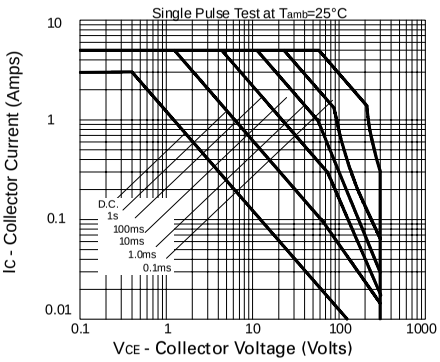

**hFE v IC**




**VBE(sat) v IC**




**VBE(on) v IC**




**Safe Operating Area**

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