



# THE DATASHEET OF ZTX869STZ



# 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

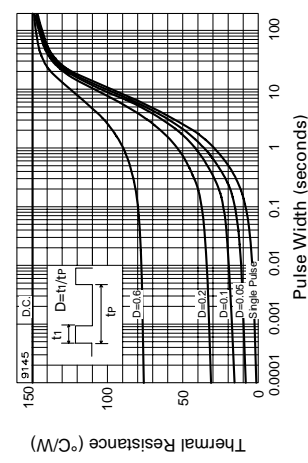
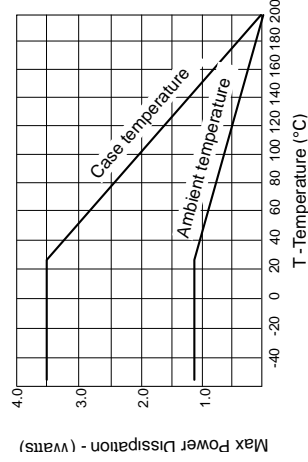
### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ )

| 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 $\mu$ s. Duty cycle  $\leq$ 2%

### 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   | $^{\circ}C/W$ |



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### 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        |
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| 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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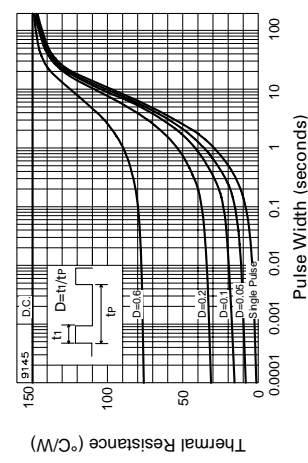
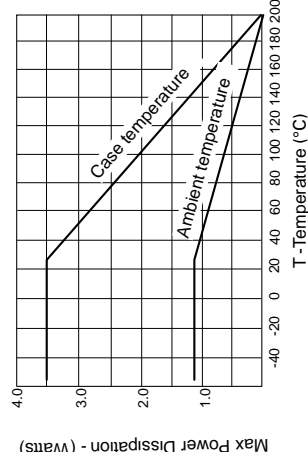
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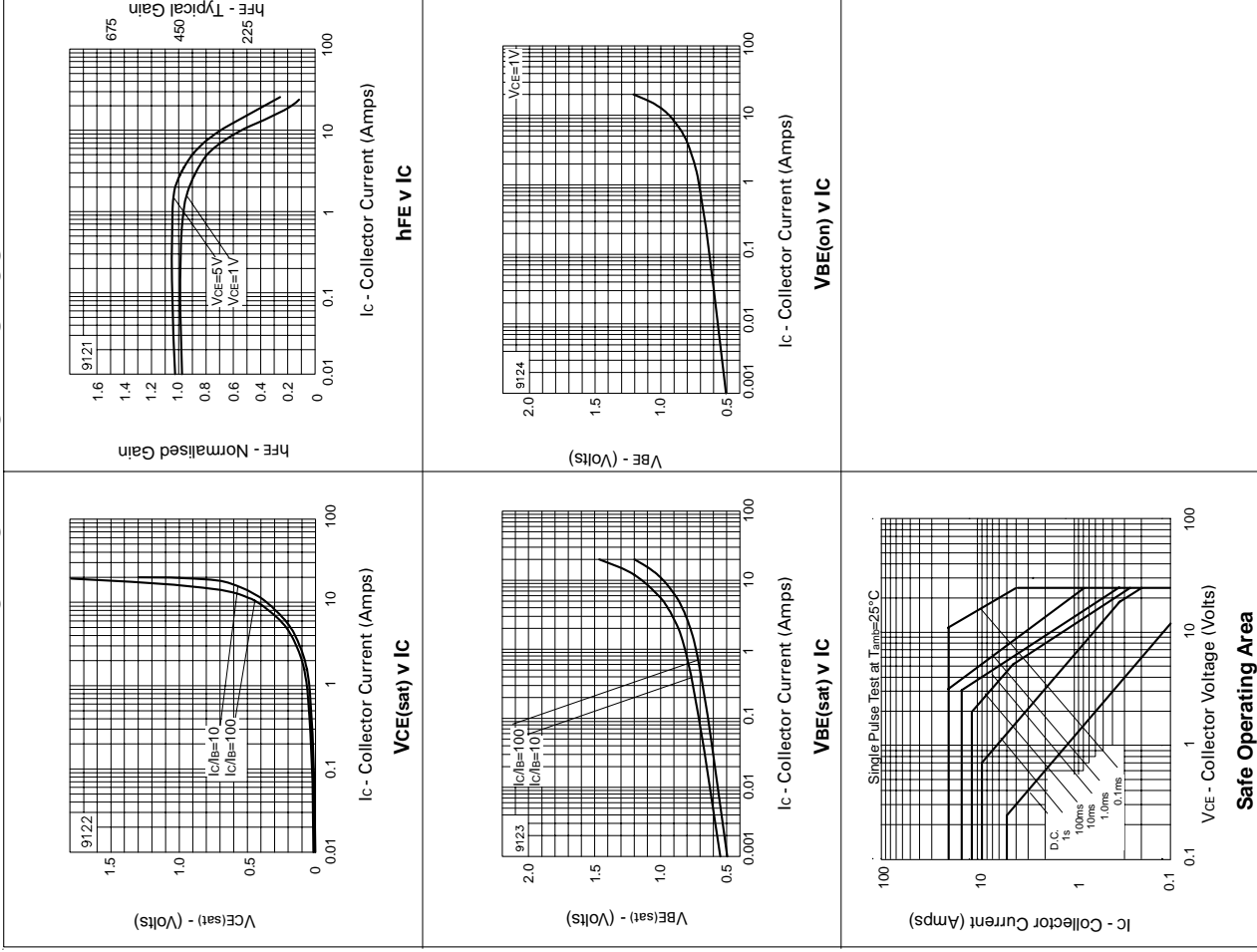
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| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ |



# ZTX869

## TYPICAL CHARACTERISTICS



## Looking for pricing, stock, or lifecycle information?

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-  [Diodes Incorporated Information](#)

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-  Shortage Management
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