

PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ZTX718

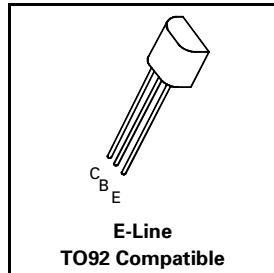
ISSUE 4- MAY 1998

FEATURES

- * 6A Peak pulse current
- * Excellent h_{FE} characteristics up to 6A (pulsed)
- * low saturation voltage
- * I_C Cont 2.5A

APPLICATIONS

- * Power MOSFET gate driver in conjunction with complementary ZTX618



ABSOLUTE MAXIMUM RATINGS.

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|----------------|-------------|-------------|
| Collector-Base Voltage | V_{CBO} | -20 | V |
| Collector-Emmitter Voltage | V_{CEO} | -20 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Peak Pulse Current | I_{CM} | -6 | A |
| Continuous Collector Current | I_C | -2.5 | A |
| Base Current | I_B | -500 | mA |
| Practical Power Dissipation* | P_{totp} | 1.5 | W |
| Power Dissipation at $T_{amb}=25^{\circ}C$ | P_{tot} | 1 | W |
| Operating and Storage Temperature Range | $T_j; T_{stg}$ | -55 to +200 | $^{\circ}C$ |

* Device mounted on P.C.B. with copper equal to 1 sq. Inch minimum.

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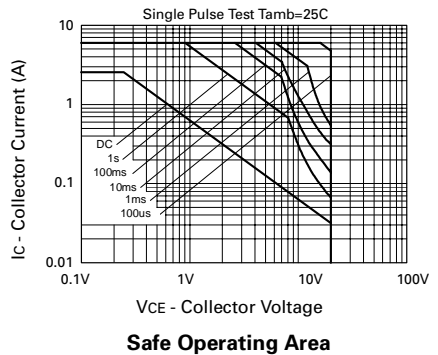
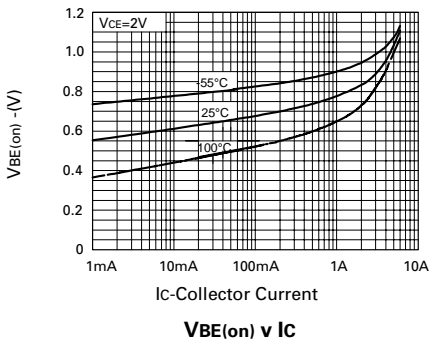
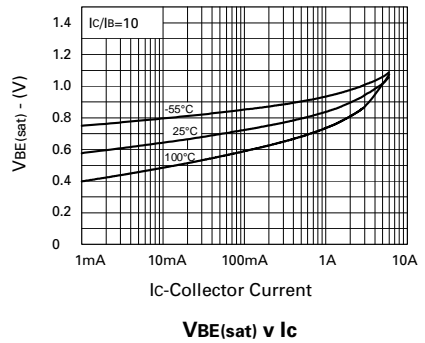
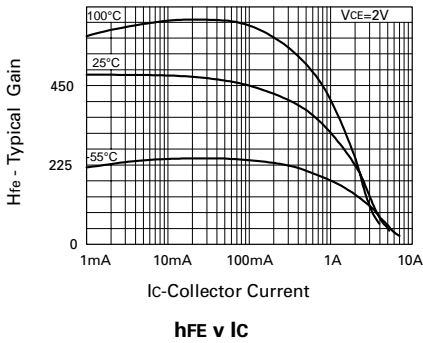
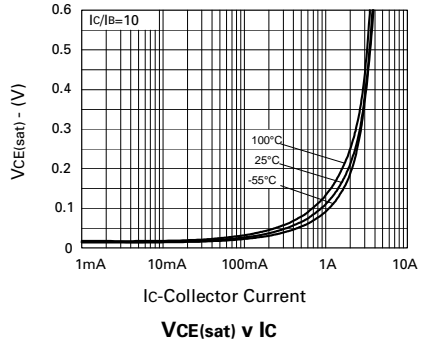
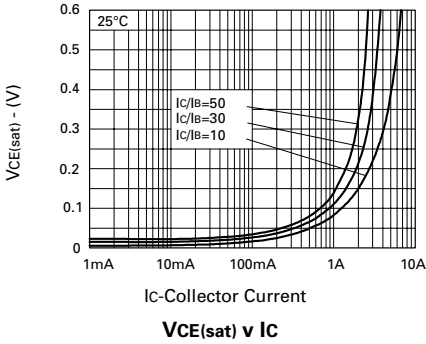
ELECTRIAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated).

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---------------------------------------|---------------|-------------------------------|-------------------------------|-----------------------------|----------------------|--|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -20 | -65 | | V | $I_C = -100\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -20 | -55 | | V | $I_C = -10\text{mA}^*$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5 | -8.8 | | V | $I_E = -100\mu\text{A}$ |
| Collector Cut-Off Current | I_{CBO} | | | -100 | nA | $V_{CB} = -15\text{V}$ |
| Emitter Cut-Off Current | I_{EBO} | | | -100 | nA | $V_{EB} = -4\text{V}$ |
| Collector Emitter Cut-Off Current | I_{CES} | | | -100 | nA | $V_{CES} = -15\text{V}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | -16 -130 -145 -190 | -40 -200 -220 -260 | mV mV mV mV | $I_C = -0.1\text{A}, I_B = -10\text{mA}^*$ $I_C = -1\text{A}, I_B = -20\text{mA}^*$ $I_C = -1.5\text{A}, I_B = -50\text{mA}^*$ $I_C = -2.5\text{A}, I_B = -200\text{mA}^*$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | -0.98 | -1.1 | V | $I_C = -2.5\text{A}, I_B = -200\text{mA}^*$ |
| Base-Emitter Turn-On Voltage | $V_{BE(on)}$ | | -0.85 | -0.95 | V | $I_C = -2.5\text{A}, V_{CE} = -2\text{V}^*$ |
| Static Forward Current Transfer Ratio | h_{FE} | 300 300 150 35 15 | 475 450 230 70 30 | | | $I_C = -10\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -100\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -2\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -4\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -6\text{A}, V_{CE} = -2\text{V}^*$ |
| Transition Frequency | f_T | 150 | 180 | | MHz | $I_C = -50\text{mA}, V_{CE} = -10\text{V}$ $f = 100\text{MHz}$ |
| Output Capacitance | C_{obo} | | 21 | 30 | pF | $V_{CB} = -10\text{V}, f = 1\text{MHz}$ |
| Turn-On Time | $t_{(on)}$ | | 40 | | ns | $V_{CC} = -10\text{V}, I_C = -1\text{A}$ $I_{B1} = I_{B2} = 20\text{mA}$ |
| Turn-Off Time | $t_{(off)}$ | | 670 | | ns | |

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

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TYPICAL CHARACTERISTICS

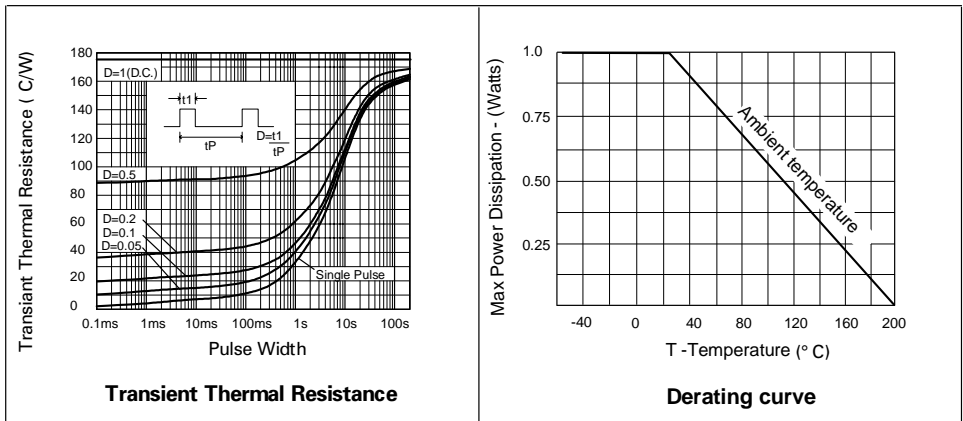


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THERMAL CHARACTERISTICS

| PARAMETER | SYMBOL | MAX. | UNIT |
|----------------------------------|--------------------|------|------|
| Thermal Resistance: | | | |
| Junction to Ambient ₁ | $R_{th(j-amb)1}$ | 175 | °C/W |
| Junction to Ambient ₂ | $R_{th(j-amb)2} †$ | 116 | °C/W |

† Device mounted on P.C.B. with copper equal to 1 sq. Inch minimum.



ZETEX Zetex plc.
 Fields New Road, Chadderton, Oldham, OL9-8NP, United Kingdom.
 Telephone: (44)161 622 4422 (Sales), (44)161 622 4444 (General Enquiries)
 Fax: (44)161 622 4420

Zetex GmbH
 Streifeldstraße 19
 D-81673 München
 Germany
 Telefon: (49) 89 45 49 49 0
 Fax: (49) 89 45 49 49 49

Zetex Inc.
 47 Mall Drive, Unit 4
 Commack NY 11725
 USA
 Telephone: (516) 543-7100
 Fax: (516) 864-7630

Zetex (Asia) Ltd.
 3510 Metroplaza, Tower 2
 Hing Fong Road,
 Kwai Fong, Hong Kong
 Telephone: (852) 26100 611
 Fax: (852) 24250 494

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