

NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ISSUE 2 – JULY 1995

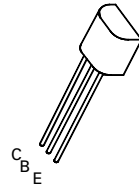
ZTX618

FEATURES

- * 10A Peak pulse current
- * Excellent h_{FE} characteristics up to 10A (pulsed)
- * Extremely low saturation voltage e.g. 7mV typ.
- * I_C cont 3.5A

APPLICATIONS

- * Power MOSFET gate driver in conjunction with complementary ZTX718



**E-Line
TO92 Compatible**

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	10	A
Continuous Collector Current	I_C	3.5	A
Base Current	I_B	500	mA
Practical Power Dissipation*	P_{totp}	1.5	W
Power Dissipation	P_{tot}	1	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	°C

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

ZTX618

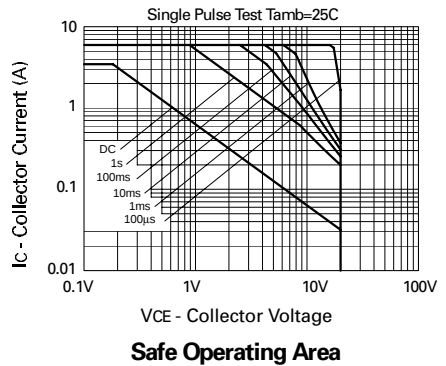
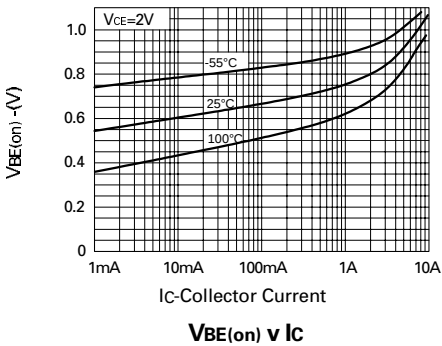
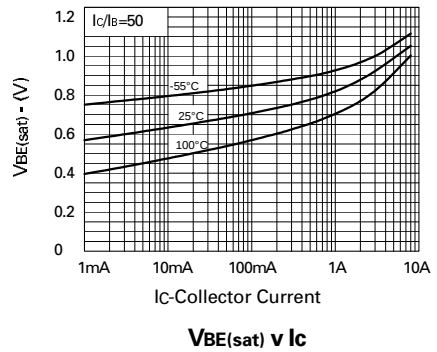
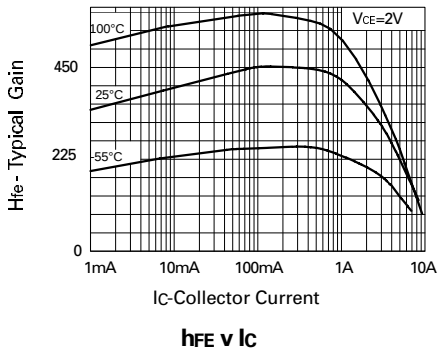
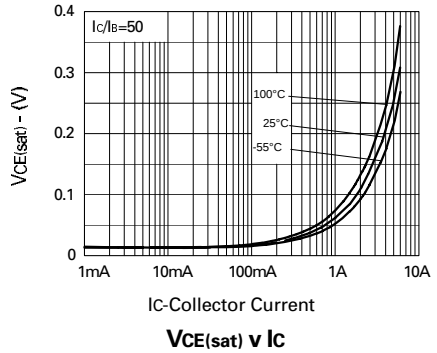
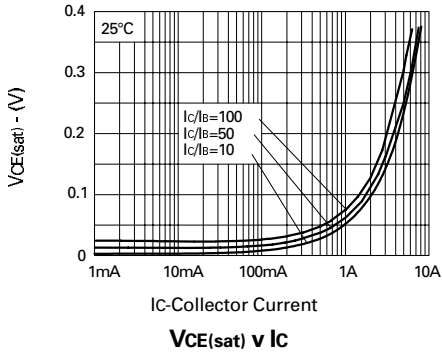
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	20	100		V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	20	27		V	$I_C=10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	8.3		V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}			100	nA	$V_{CB}=16\text{V}$
Emitter Cut-Off Current	I_{EBO}			100	nA	$V_{EB}=4\text{V}$
Collector Emitter Cut-Off Current	I_{CES}			100	nA	$V_{CES}=16\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		7 80 210	15 150 255	mV mV mV	$I_C=0.1\text{A}, I_B=10\text{mA}^*$ $I_C=1\text{A}, I_B=10\text{mA}^*$ $I_C=3.5\text{A}, I_B=50\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.93	1.05	V	$I_C=3.5\text{A}, I_B=50\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		0.86	1.0	V	$I_C=3.5\text{A}, V_{CE}=2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	200 300 170 40	400 450 300 85			$I_C=10\text{mA}, V_{CE}=2\text{V}^*$ $I_C=200\text{mA}, V_{CE}=2\text{V}^*$ $I_C=3\text{A}, V_{CE}=2\text{V}^*$ $I_C=10\text{A}, V_{CE}=2\text{V}^*$
Transition Frequency	f_T	100	140		MHz	$I_C=50\text{mA}, V_{CE}=10\text{V}$ $f=100\text{MHz}$
Output Capacitance	C_{obo}		23	30	pF	$V_{CB}=10\text{V}, f=1\text{MHz}$
Turn-On Time	$t_{(on)}$		170		ns	$V_{CC}=10\text{V}, I_C=1\text{A}$ $I_{B1}=I_{B2}=10\text{mA}$
Turn-Off Time	$t_{(off)}$		400		ns	

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

ZTX618

TYPICAL CHARACTERISTICS

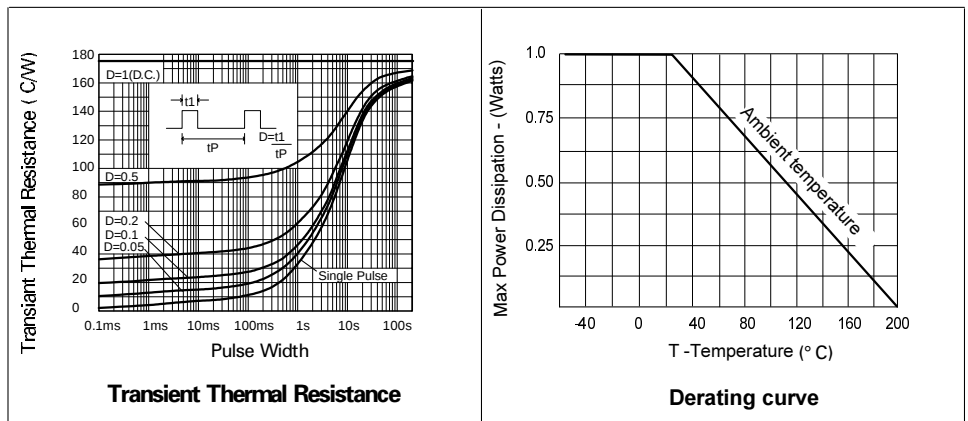


ZTX618

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient ₁ Junction to Ambient ₂	$R_{th(j-amb)1}$ $R_{th(j-amb)2} \uparrow$	175 116	$^{\circ}\text{C/W}$ $^{\circ}\text{C/W}$

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



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
Streitfeldstraße 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

These are supported by
agents and distributors in
major countries world-wide
©Zetex plc 1997
Internet:
<http://www.zetex.com>

This publication is issued to provide outline information only which (unless agreed by the Company in writing) may not be used, applied or reproduced for any purpose or form part of any order or contract or be regarded as a representation relating to the products or services concerned. The Company reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.