

NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ZTX1048A

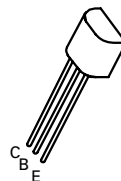
ISSUE 3 – FEBRUARY 1995

FEATURES

- * $V_{CEV}=50V$
- * Very Low Saturation Voltages
- * High Gain
- * 20 Amps pulse current

APPLICATIONS

- * LCD Backlight Convertors
- * Emergency Lighting
- * DC-DC Convertors



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	ZTX1048A	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	17.5	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	20	A
Continuous Collector Current	I_C	4	A
Base Current	I_B	500	mA
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	1	W
Operating and Storage Temperature Range	$T_j:T_{stg}$	-55 to +200	$^{\circ}C$

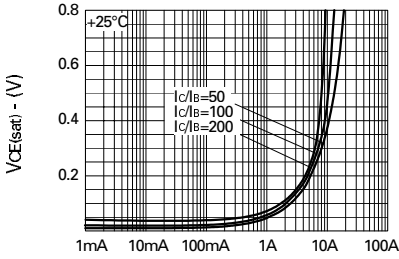
ZTX1048A

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

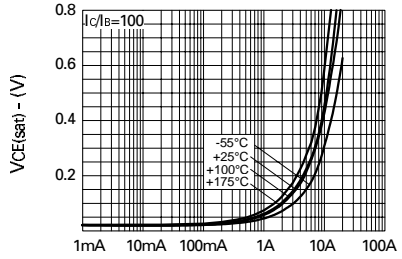
PARAMETER	SYMBOL	ZTX1048A			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50	85		V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	V_{CES}	50	85		V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	V_{CEO}	17.5	24		V	$I_C=10\text{mA}$
Collector-Emitter Breakdown Voltage	V_{CEV}	50	85		V	$I_C=100\mu\text{A}, V_{EB}=1\text{V}$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	8.7		V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}		0.3	10	nA	$V_{CB}=35\text{V}$
Emitter Cut-Off Current	I_{EBO}		0.3	10	nA	$V_{EB}=4\text{V}$
Collector Emitter Cut-Off Current	I_{CES}		0.3	10	nA	$V_{CES}=35\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		27 55 110 210	45 75 150 245	mV mV mV mV	$I_C=0.5\text{A}, I_B=10\text{mA}^*$ $I_C=1\text{A}, I_B=10\text{mA}^*$ $I_C=2\text{A}, I_B=10\text{mA}^*$ $I_C=4\text{A}, I_B=20\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		860	950	mV	$I_C=4\text{A}, I_B=20\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		860	950	mV	$I_C=4\text{A}, V_{CE}=2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	280 300 300 220 50	440 450 450 330 80	1200		$I_C=10\text{mA}, V_{CE}=2\text{V}^*$ $I_C=0.5\text{A}, V_{CE}=2\text{V}^*$ $I_C=1\text{A}, V_{CE}=2\text{V}^*$ $I_C=4\text{A}, V_{CE}=2\text{V}^*$ $I_C=20\text{A}, V_{CE}=2\text{V}^*$
Transition Frequency	f_T		150		MHz	$I_C=50\text{mA}, V_{CE}=10\text{V}$ $f=50\text{MHz}$
Output Capacitance	C_{obo}		60	80	pF	$V_{CB}=10\text{V}, f=1\text{MHz}$
Switching Times	t_{on}		130		ns	$I_C=4\text{A}, I_B=40\text{mA}, V_{CC}=10\text{V}$
	t_{off}		180		ns	$I_C=4\text{A}, I_B=\pm 40\text{mA}, V_{CC}=10\text{V}$

ZTX1048A

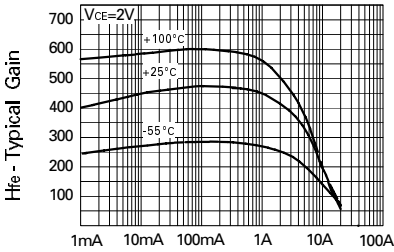
TYPICAL CHARACTERISTICS



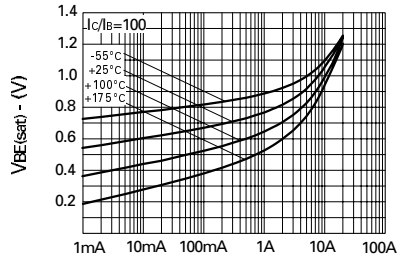
IC-Collector Current
 $V_{CE(sat)}$ v I_C



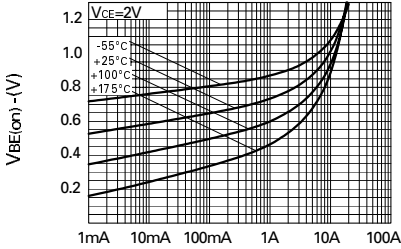
IC-Collector Current
 $V_{CE(sat)}$ v I_C



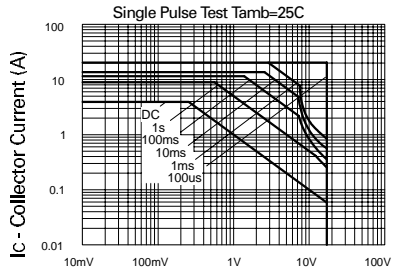
IC-Collector Current
 H_{fe} v I_C



IC-Collector Current
 $V_{BE(sat)}$ v I_C



IC-Collector Current
 $V_{BE(on)}$ v I_C



VCE - Collector Voltage
Safe Operating Area

ZTX1048A



SPICE PARAMETERS

*ZETEX ZTX1048A Spice model Last revision 20/01/95

*

```
.MODEL ZTX1048A NPN IS=13.73E-13 NF=1.0 BF=550 IKF=8.0 VAF=120
```

```
+ ISE=2.6E-13 NE=1.38 NR=1.0 BR=300 IKR=6 VAR=15
```

```
+ ISC=1.6E-12 NC=1.4 RB=0.1 RE=0.022 RC=0.010
```

```
+ CJC=136E-12 CJE=559.1E-12 MJC=0.267 MJE=0.299
```

```
+ VJC=0.420 VJE=0.533 TF=600E-12 TR=3E-9
```

*

© 1995 ZETEX PLC

The copyright in this model and the design embodied belong to Zetex PLC ("Zetex"). It is supplied free of charge by Zetex for the purpose of research and design and may be used or copied intact (including this notice) for that purpose only. All other rights are reserved. The model is believed accurate but no condition or warranty as to its merchantability or fitness for purpose is given and no liability in respect of any use is accepted by Zetex PLC, its distributors or agents.



Zetex plc.
Fields New Road, Chadderton, Oldham, OL9-8NP, United Kingdom.
Telephone: (44)161-627 5105 (Sales), (44)161-627 4963 (General Enquiries)
Facsimile: (44)161-627 5467

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

Zetex Inc.
87 Modular Avenue
Commack NY11725
Telephone: (516) 543-7100
Fax: (516) 864-7630

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

These are supported by
agents and distributors in
major countries world-wide
© Zetex plc 1995

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.

单击下面可查看定价，库存，交付和生命周期等信息

[>>Diodes Incorporated\(达达科技\(美台\)\)](#)