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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ZTX1048A

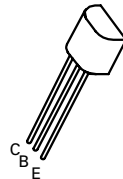
ISSUE 3 – FEBRUARY 1995

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	$^{\circ}C$

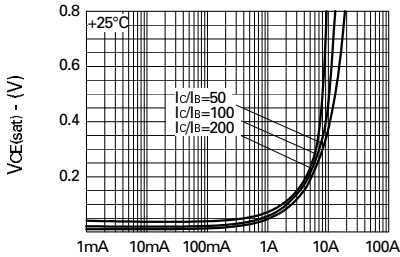
ZTX1048A

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	$I_C=4\text{A}$, $I_B=\pm 40\text{mA}$, $V_{CC}=10\text{V}$

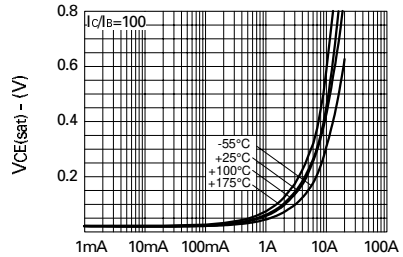
ZTX1048A

TYPICAL CHARACTERISTICS



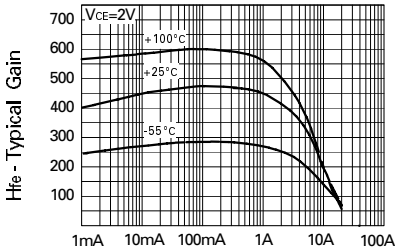
I_C -Collector Current

$V_{CE(sat)}$ v I_C



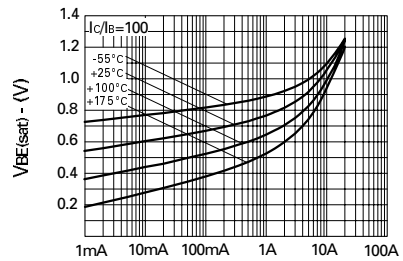
I_C -Collector Current

$V_{CE(sat)}$ v I_C



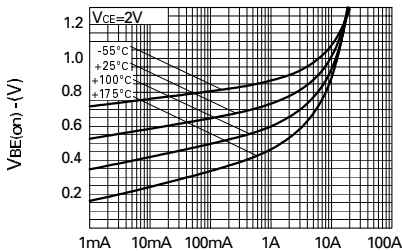
I_C -Collector Current

h_{fe} v I_C



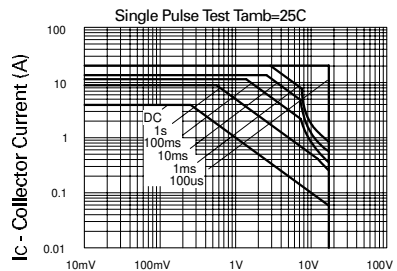
I_C -Collector Current

$V_{BE(sat)}$ v I_C



I_C -Collector Current

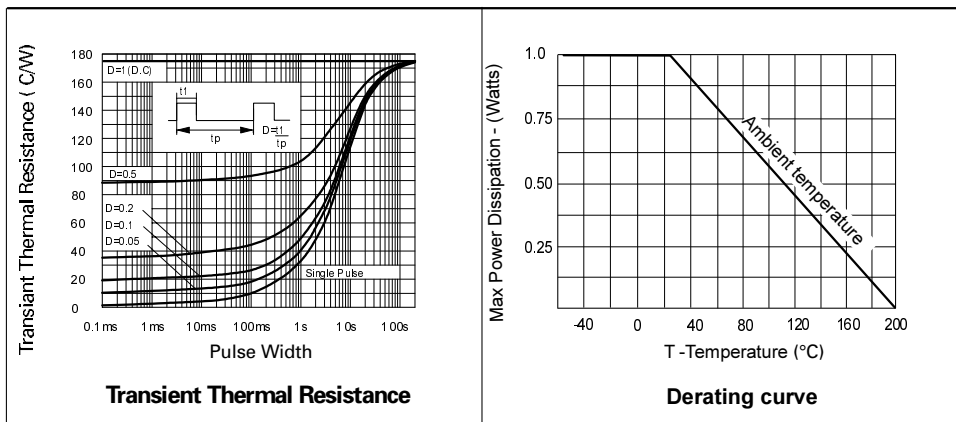
$V_{BE(on)}$ v I_C



V_{CE} - Collector Voltage

Safe Operating Area

ZTX1048A



SPICE PARAMETERS

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

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.MODEL ZTX1048A NPN IS=13.73E-13 NF=1.0 BF=550 IKF=8.0 VAF=120
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+ ISE=2.6E-13 NE=1.38 NR=1.0 BR=300 IKR=6 VAR=15
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```
+ ISC=1.6E-12 NC=1.4 RB=0.1 RE=0.022 RC=0.010
```

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+ CJC=136E-12 CJE=559.1E-12 MJC=0.267 MJE=0.299
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+ VJC=0.420 VJE=0.533 TF=600E-12 TR=3E-9
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