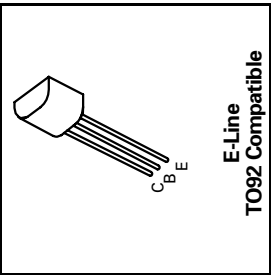


ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	ZTX1048A			CONDITIONS.
		MIN.	TYP.	MAX.	
Collector-Base Breakdown Voltage	V _{(BR)CBO}	50	85		I _C =100µA
Collector-Emitter Breakdown Voltage	V _{CES}	50	85		I _C =100µA
Collector-Emitter Breakdown Voltage	V _{CEO}	17.5	24		I _C =10mA
Collector-Emitter Breakdown Voltage	V _{CEV}	50	85		I _C =100µA, V _{EB} =1V
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5	8.7		I _E =100µA
Collector Cut-Off Current	I _{CBO}		0.3	10	V _{CB} =35V
Emitter Cut-Off Current	I _{EBO}		0.3	10	V _{EB} =4V
Collector Emitter Cut-Off Current	I _{CES}		0.3	10	V _{CES} =35V
Collector-Emitter Saturation Voltage	V _{CE(sat)}		27	45	I _C =0.5A, I _B =10mA*
			55	75	I _C =1A, I _B =10mA*
			110	150	I _C =2A, I _B =10mA*
			210	245	I _C =4A, I _B =20mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}		860	950	I _C =4A, I _B =20mA*
Base-Emitter Turn-On Voltage	V _{BE(on)}		860	950	I _C =4A, V _{CE} =2V*
Static Forward Current Transfer Ratio	h _{FE}	280	440		I _C =10mA, V _{CE} =2V*
		300	450		I _C =0.5A, V _{CE} =2V*
		300	450	1200	I _C =1A, V _{CE} =2V*
		220	330		I _C =4A, V _{CE} =2V*
		50	80		I _C =20A, V _{CE} =2V*
Transition Frequency	f _T		150		I _C =50mA, V _{CE} =10V f=50MHz
Output Capacitance	C _{obo}		60	80	V _{CB} =10V, f=1MHz
Switching Times	t _{on}		130		I _C =4A, I _B =40mA, V _{CC} =10V
	t _{off}		180		I _C =4A, I _B =±40mA, V _{CC} =10V



Full characterised data now available

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°C	P _{tot}	1	W
Operating and Storage Temperature Range	T _J ; T _{stg}	-55 to +200	°C

ZTX1048A

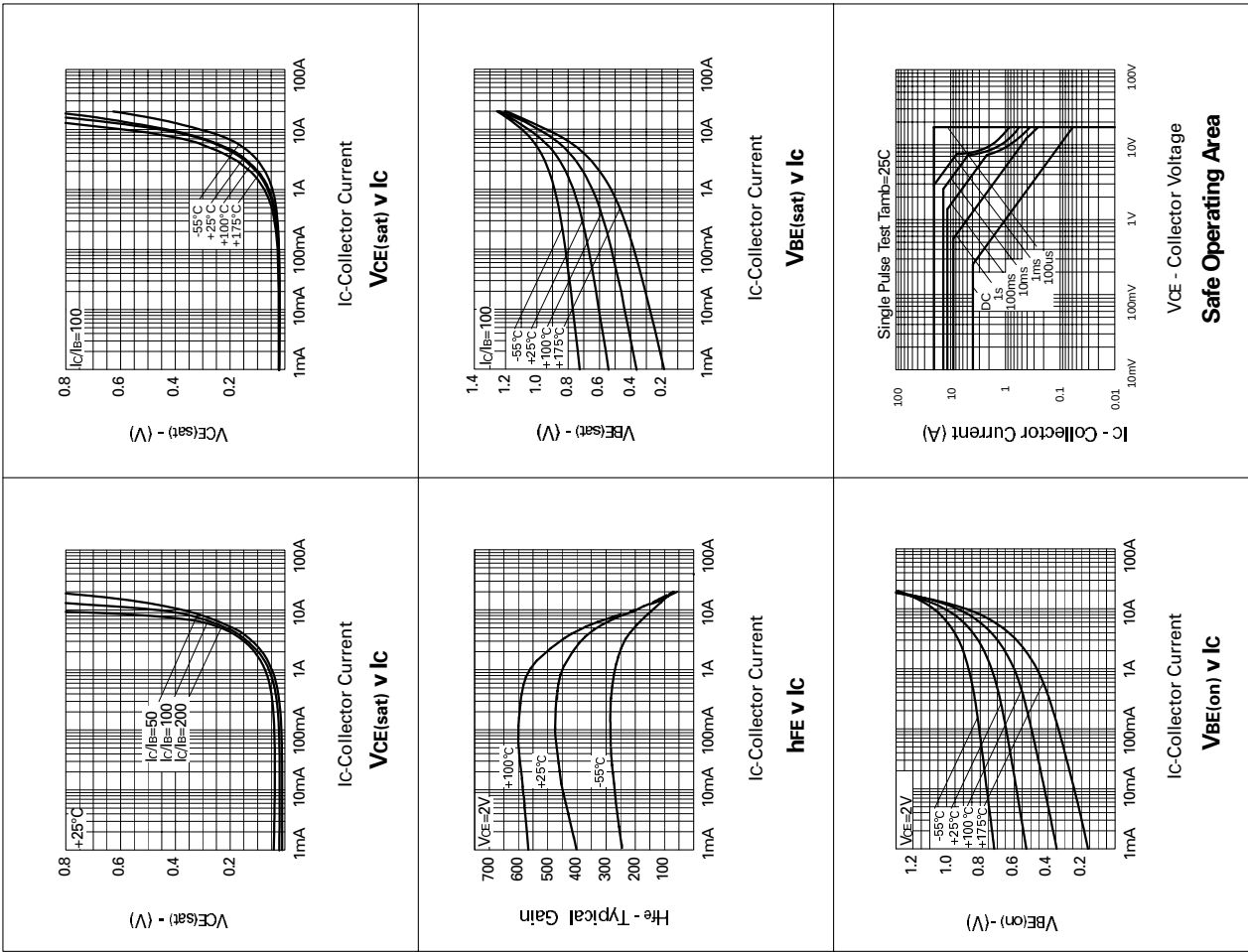
ZTX1048A

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	V _{(BR)CBO}	50	85		V	I _C =100μA
Collector-Emitter Breakdown Voltage	V _{CES}	50	85		V	I _C =100μA
Collector-Emitter Breakdown Voltage	V _{CEO}	17.5	24		V	I _C =10mA
Collector-Emitter Breakdown Voltage	V _{CEV}	50	85		V	I _C =100μA, V _{EB} =1V
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5	8.7		V	I _E =100μA
Collector Cut-Off Current	I _{CBO}		0.3	10	nA	V _{CB} =35V
Emitter Cut-Off Current	I _{EBO}		0.3	10	nA	V _{EB} =4V
Collector Emitter Cut-Off Current	I _{CES}		0.3	10	nA	V _{CES} =35V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	27 55 110 220	27 55 110 210	45 75 150 245	mV	I _C =0.5A, I _B =10mA* I _C =1A, I _B =10mA* I _C =2A, I _B =10mA* I _C =4A, I _B =20mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}		860	950	mV	I _C =4A, I _B =20mA*
Base-Emitter Turn-On Voltage	V _{BE(on)}		860	950	mV	I _C =4A, V _{CE} =2V*
Static Forward Current Transfer Ratio	h _{FE}	280 300 300 220 50	440 450 450 330 80	1200		I _C =10mA, V _{CE} =2V* I _C =0.5A, V _{CE} =2V* I _C =1A, V _{CE} =2V* I _C =4A, V _{CE} =2V* I _C =20A, V _{CE} =2V*
Transition Frequency	f _T		150		MHz	I _C =50mA, V _{CE} =10V f=50MHz
Output Capacitance	C _{obo}		60	80	pF	V _{CB} =10V, f=1MHz
Switching Times	t _{on}		120		ns	I _C =4A, I _B =40mA, V _{CC} =10V
	t _{off}		250		ns	I _C =4A, I _B =±40mA, V _{CC} =10V

*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤ 2%

TYPICAL CHARACTERISTICS



V_{CE} - Collector Voltage
Safe Operating Area

V_{BE(on)} v I_C

V_{BE(sat)} v I_C

h_{FE} v I_C

ZTX1048A

NPN SILICON PLANAR MEDIUM POWER
HIGH GAIN TRANSISTOR

ISSUE 3 – FEBRUARY 1995

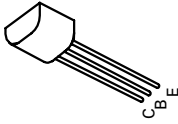
ZTX1048A

FEATURES

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

APPLICATIONS

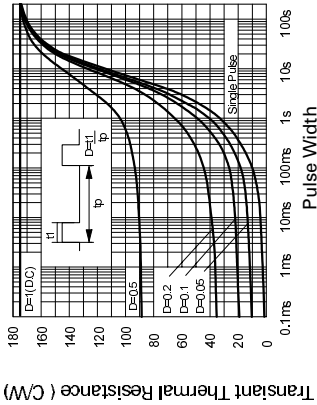
- * LCD Backlight Convertors
- * Emergency Lighting
- * DC-DC Convertors



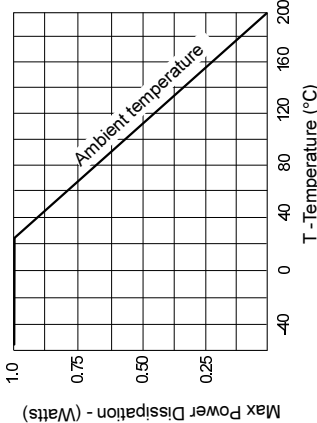
E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	ZTX1048A	UNIT
Collector-Base Voltage	V_{CB0}	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	$^{\circ}C$



Transient Thermal Resistance



Derating curve

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

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