ZTX1049A

NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

FEATURES

- V_{CEV} = 80V
- Very low saturation voltages
- High gain
- 20 amps pulse current

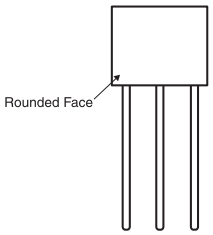
APPLICATIONS

- LCD backlight converters
- Emergency lighting
- DC-DC converters



E-Line

PINOUT



SIDE VIEW

ABSOLUTE MAXIMUM RATINGS

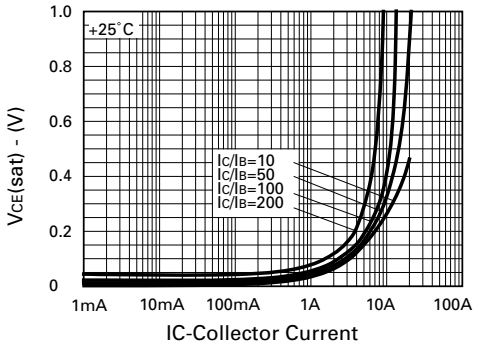
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	20	A
Continuous Collector Current	I_C	4	A
Base Current	I_B	500	mA
Power Dissipation at T_{amb}=25°C	P_{tot}	1	W
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +200	°C

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

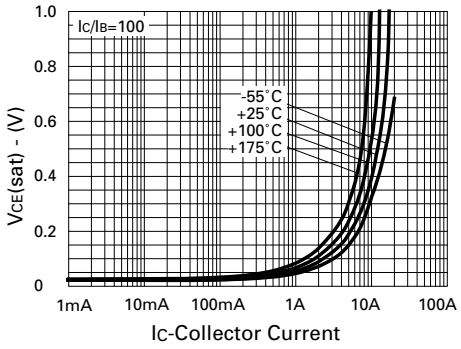
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80	120		V	I_C=100μA
Collector-Emitter Breakdown Voltage	V_{CES}	80	120		V	IC=100μA
Collector-Emitter Breakdown Voltage	V_{CEO}	25	30		V	IC=10mA
Collector-Emitter Breakdown Voltage	V_{CEV}	80	120		V	IC=100μA, V_{EB}=1V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	8.75		V	I_E=100μA
Collector Cut-Off Current	I_{CBO}		0.3	10	nA	V_{CB}=50V
Emitter Cut-Off Current	I_{EBO}		0.3	10	nA	V_{EB}=4V
Collector Emitter Cut-Off Current	I_{CES}		0.3	10	nA	VCES=50V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		30 60 125 155	45 80 180 220	mV mV mV 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=50mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		890	950	mV	I_C=4A, I_B=50mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		820	900	mV	IC=4A, V_{CE}=2V*
Static Forward Current Transfer Ratio	h_{FE}	250 300 300 200 35	430 450 450 350 70	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		180		MHz	I_C=50mA, V_{CE}=10V f=50MHz
Output Capacitance	C_{obo}		45	60	pF	V_{CB}=10V, f=1MHz
Turn - On Time	t_{on}		125		ns	I_C=4A, I_B=40mA, V_{CC}=10V
Turn -Off Time	t_{off}		380		ns	I_C=4A, I_B=±40mA, V_{CC}=10V

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

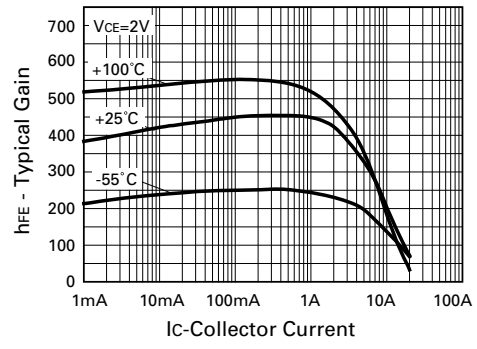
TYPICAL CHARACTERISTICS



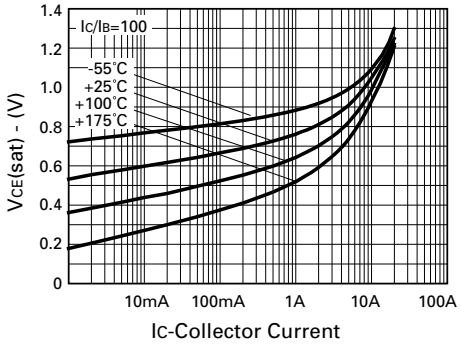
VCE(sat) v IC



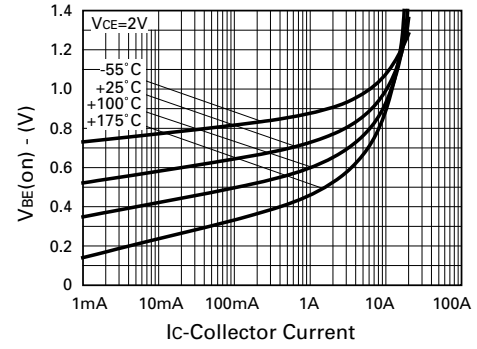
VCE(sat) v IC



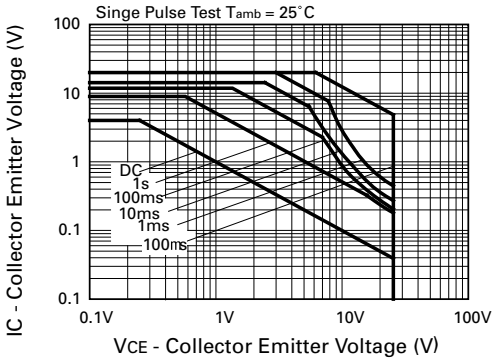
hFE V IC



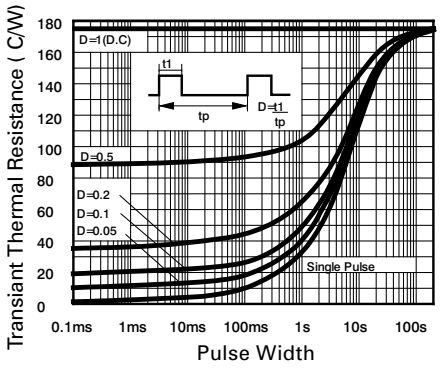
VBE(sat) v IC



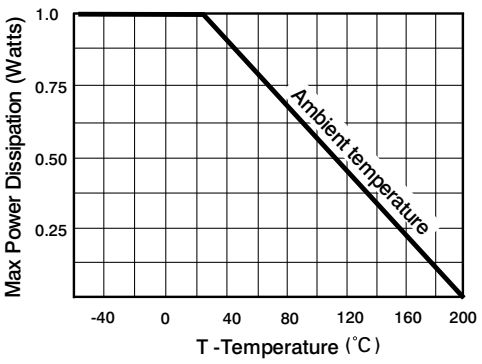
VBE(on) v IC



Safe Operating Area



Transient Thermal Resistance



Derating curve

SPICE PARAMETERS

*ZETEX ZTX1049A Spice model v1.0 Last revision 10/1/97

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.MODEL ZTX1149A PNP IS=9.5e-13 NF=1.002 ISE=1.2e-13 NE=1.4 BF=520

+ VAF=24.97 IKF=5 NR=0.997 ISC=4.5E-13 NC=1.25 BR=40

+ VAR=2.51 IKR=0.7 RE=20e-3 RB=150e-3 RC=10e-3

+ CJE=490e-12 CJC=150e-12 VJC=1.094 MJC=0.4739

+ TF=1e-9 TR=3.5e-9

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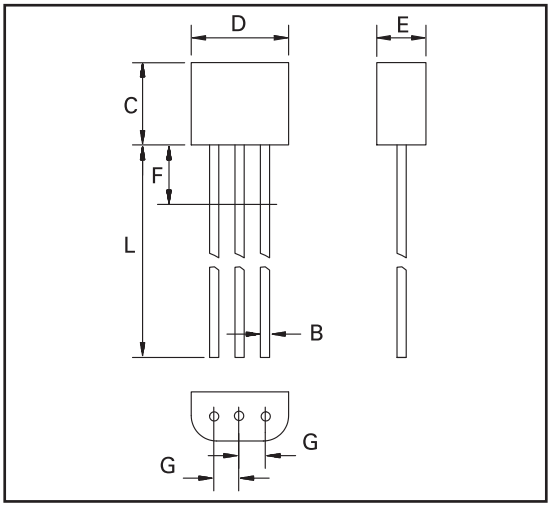
"Issue"This term denotes an issued datasheet containing finalized specifications. However, changes to specifications may occur, at any time and without notice.

PACKAGE OUTLINE



Controlling dimensions are in millimeters. Approximate conversions are given in inches

PACKAGE DIMENSIONS

DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.41	0.495	0.016	0.0195
B	0.41	0.495	0.016	0.0195
C	3.61	4.01	0.142	0.158
D	4.37	4.77	0.172	0.188
E	2.16	2.41	0.085	0.095
F	—	2.50	—	0.098
G	1.27 NOM		0.050 NOM	
L	13.00	13.97	0.512	0.550

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