



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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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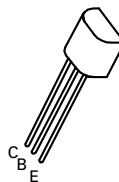
PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ISSUE 1 - JANUARY 1997

ZTX1147A

FEATURES

- * $V_{CE0} = -12V$
- * 4 Amp Continuous Current
- * 20 Amp pulse Current
- * Low Saturation Voltage
- * High Gain



E-Line
T092 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-15	V
Collector-Emitter Voltage	V_{CEO}	-12	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	$^{\circ}C$

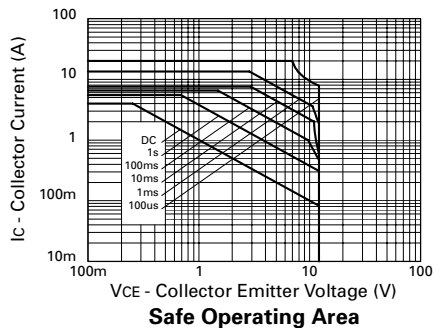
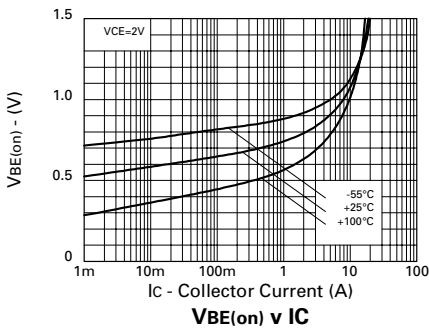
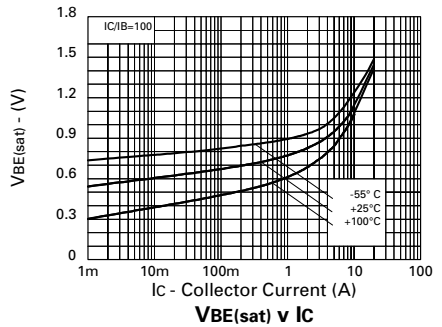
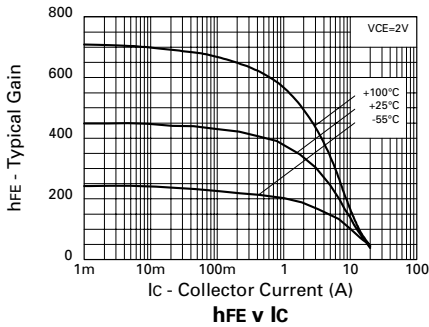
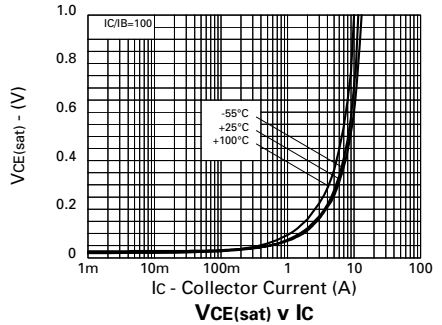
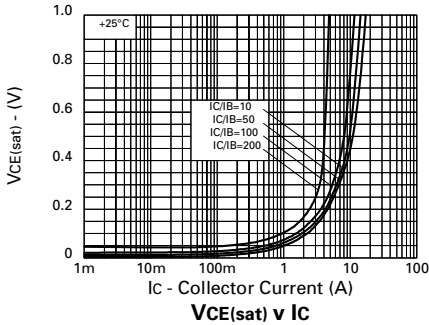
ZTX1147A

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

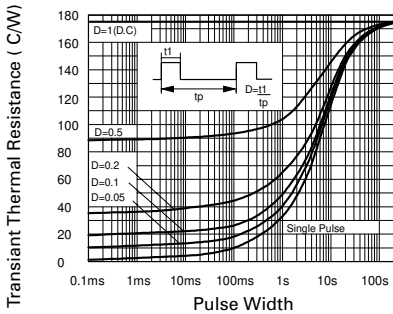
PARAMETER	SYMBOL	VALUE			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-15	-35		V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	-12	-25		V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-12	-25		V	$I_C = -10\text{mA}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEV}$	-12	-25		V	$I_C = -100\mu\text{A}$, $V_{EB} = +1\text{V}$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-8.5		V	$I_E = -100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}		-0.3	-100	nA	$V_{CB} = -12\text{V}$
Emitter Cut-Off Current	I_{EBO}		-0.3	-100	nA	$V_{EB} = -4\text{V}$
Collector Emitter Cut-Off Current	I_{CES}		-0.3	-100	nA	$V_{CE} = -10\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-25 -70 -90 -115 -175	-50 -110 -130 -170 -235	mV mV mV mV mV	$I_C = -0.1\text{A}$, $I_B = -1\text{mA}^*$ $I_C = -0.5\text{A}$, $I_B = -2.5\text{mA}^*$ $I_C = -1\text{A}$, $I_B = -6\text{mA}^*$ $I_C = -2\text{A}$, $I_B = -20\text{mA}^*$ $I_C = -4\text{A}$, $I_B = -70\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-890	-1000	mV	$I_C = -4\text{A}$, $I_B = -70\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-830	-950	mV	$I_C = -4\text{A}$, $V_{CE} = -2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	270 250 200 170 90	450 400 340 270 150 50	850		$I_C = -10\text{mA}$, $V_{CE} = -2\text{V}^*$ $I_C = -0.5\text{A}$, $V_{CE} = -2\text{V}^*$ $I_C = -2.0\text{A}$, $V_{CE} = -2\text{V}^*$ $I_C = -4.0\text{A}$, $V_{CE} = -2\text{V}^*$ $I_C = -10\text{A}$, $V_{CE} = -2\text{V}^*$ $I_C = -20\text{A}$, $V_{CE} = -2\text{V}^*$
Transition Frequency	f_T		115		MHz	$I_C = -50\text{mA}$, $V_{CE} = -10\text{V}$ $f = 50\text{MHz}$
Out Capacitance	C_{cb}		80		pF	$V_{CB} = -10\text{V}$, $f = 1\text{MHz}$
Switching Times	t_{on}		150		ns	$I_C = -4\text{A}$, $I_B = -40\text{mA}$, $V_{CC} = -10\text{V}$
	t_{off}		220		ns	$I_C = -4\text{A}$, $I_B = \pm 40\text{mA}$, $V_{CC} = -10\text{V}$

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

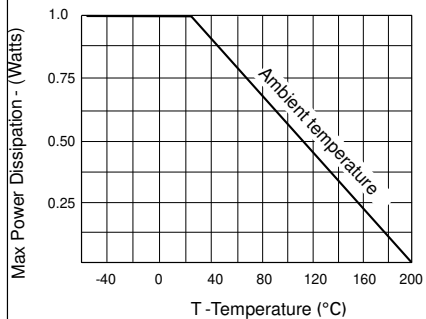
TYPICAL CHARACTERISTICS



ZTX1147A



Transient Thermal Resistance



Derating curve

SPICE PARAMETERS

* ZETEX ZTX1147 Spice model Last revision 10/12/96

*

.MODEL ZTX1147 PNP IS=1.272e-12 NF=0.989 ISE=2.5e-13 NE=1.65

+ BF=500 VAF=14.59 IKF=8 NR=1 ISC=8e-14 NC= 1.6

+ BR=90 VAR=3.1 IKR=1.2 RE=15e-3 RB=145e-3

+ RC=13e-3 CJE=560e-12

+ CJC=255e-12 VJC=0.6288

+ MJC=0.4048 TF=1.2e-9 TR=13e-9

*

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