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.

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NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ZTX1051A

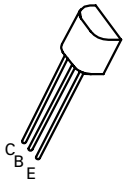
ISSUE 3 – FEBRUARY 95

FEATURES

* B_{CEV}=150V
* Very Low Saturation Voltage
* High Gain
* Inherently Low Noise

APPLICATIONS

* Emergency Lighting
* Low Noise Audio



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	150	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	10	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

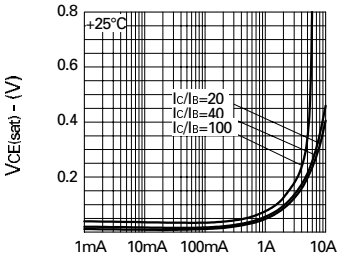
ZTX1051A

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

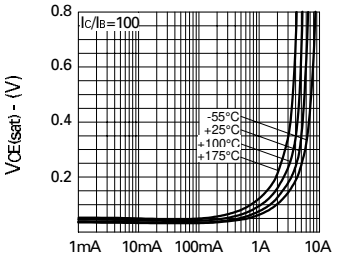
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	150	190		V	I_C=100μA
Collector-Emitter Breakdown Voltage	V_{CES}	150	190		V	IC=100μA
Collector-Emitter Breakdown Voltage	V_{CEO}	40	60		V	IC=10mA
Collector-Emitter Breakdown Voltage	V_{CEV}	150	190		V	IC=100μA, V_{EB}=1V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	8.8		V	I_E=100μA
Collector Cut-Off Current	I_{CBO}		0.3	10	nA	V_{CB}=120V
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=120V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		17 75 165	25 110 210	mV mV mV	I_C=0.2A, I_B=10mA* I_C=1A, I_B=10mA* I_C=4A, I_B=100mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		920	1000	mV	I_C=4A, I_B=100mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		825	950	mV	IC=4A, V_{CE}=2V*
Static Forward Current Transfer Ratio	h_{FE}	290 300 190 45	440 450 310 70	1200		I_C=10mA, V_{CE}=2V* I_C=1A, V_{CE}=2V* I_C=4A, V_{CE}=2V* I_C=10A, V_{CE}=2V*
Transition Frequency	f_T		155		MHz	I_C=50mA, V_{CE}=10V f=100MHz
Output Capacitance	C_{obo}		27	40	pF	V_{CB}=10V, f=1MHz
Switching Times	t_{on}		100		ns	I_C=4A, I_B=40mA, V_{CC}=10V
	t_{off}		300		ns	I_C=4A, I_B=±40mA, V_{CC}=10V

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

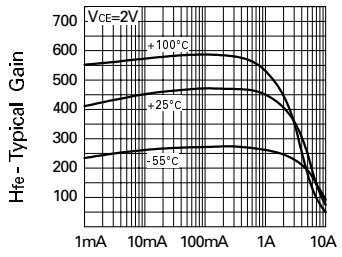
TYPICAL CHARACTERISTICS



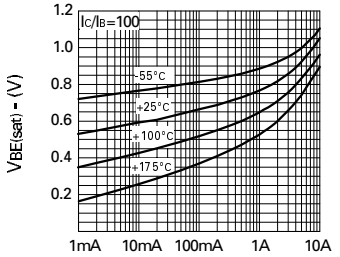
VCE(sat) v IC



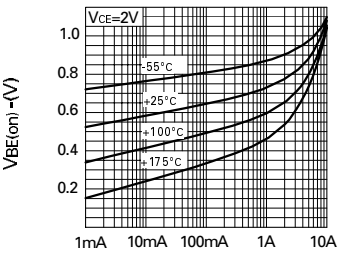
VCE(sat) v IC



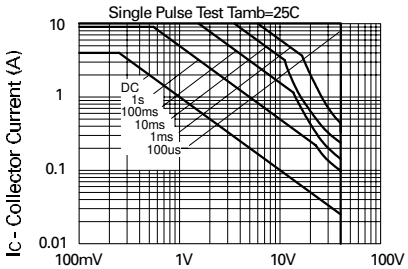
hFE v IC



VBE(sat) v IC

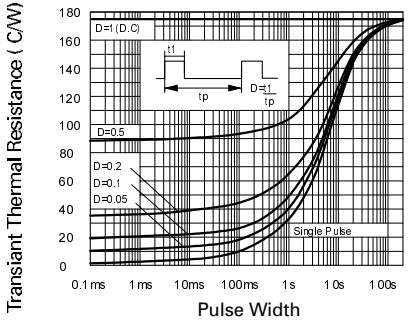


VBE(on) v IC

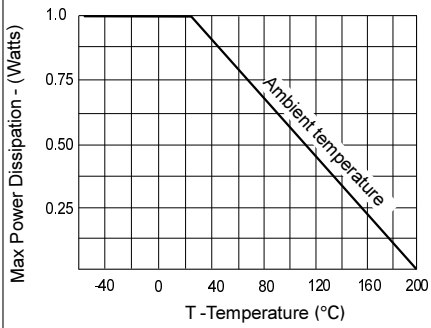


Safe Operating Area

ZTX1051A



Transient Thermal Resistance



Derating curve

SPICE PARAMETERS

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*ZETEX  ZTX1051A Spice model   Last revision 16/12/94
*
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+            ISE=0.6E-13  NE=1.25  NR=1.0  BR=150  IKR=3  VAR=15
+            ISC=1.0E-10  NC=1.7  RB=0.1  RE=0.023  RC=0.010
+            CJC=90.36E-12  CJE=547.5E-12  MJC=0.385  MJE=0.357
+            VJC=0.5 VJE=0.741  TF=600E-12  TR=8E-9
*
```


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