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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.

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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



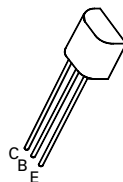
# PNP SILICON PLANAR MEDIUM POWER HIGH CURRENT TRANSISTOR

## ZTX958

ISSUE 3 – JUNE 94

### FEATURES

- \* 0.5 Amp continuous current
- \* Up to 1.5 Amps peak current
- \* Very low saturation voltage
- \* Excellent gain characteristics up to 1 Amp
- \* Spice model available



**E-Line  
TO92 Compatible**

### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	-400	V
Collector-Emitter Voltage	$V_{CEO}$	-400	V
Emitter-Base Voltage	$V_{EBO}$	-6	V
Peak Pulse Current	$I_{CM}$	-1.5	A
Continuous Collector Current	$I_C$	-0.5	A
Practical Power Dissipation*	$P_{totp}$	1.58	W
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	1.2	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	$^{\circ}C$

\*The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 1 inch square minimum

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-400	-600		V	$I_C = -100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	-400	-600		V	$I_C = -1\mu A, R_B \leq 1K\Omega$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-400	-550		V	$I_C = -10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6	-8		V	$I_E = -100\mu A$
Collector Cut-Off Current	$I_{CBO}$			-50 -1	nA $\mu A$	$V_{CB} = -300V$ $V_{CB} = -300V, T_{amb} = 100^{\circ}C$
Collector Cut-Off Current	$I_{CER}$ $R \leq 1K\Omega$			-50 -1	nA $\mu A$	$V_{CB} = -300V$ $V_{CB} = -300V, T_{amb} = 100^{\circ}C$
Emitter Cut-Off Current	$I_{EBO}$			-10	nA	$V_{EB} = -6V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-100 -150 -300	-150 -200 -400	mV mV mV	$I_C = -10mA, I_B = -1mA^*$ $I_C = -100mA, I_B = -10mA^*$ $I_C = -500mA, I_B = -100mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-790	-900	mV	$I_C = -500mA, I_B = -100mA^*$

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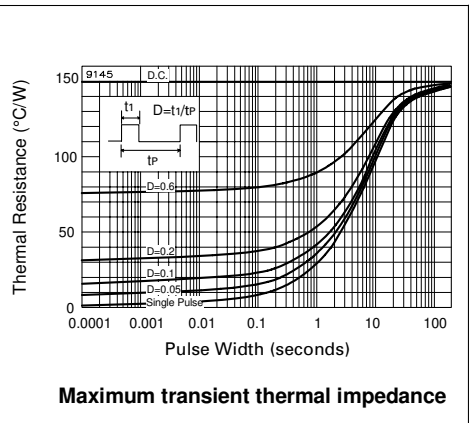
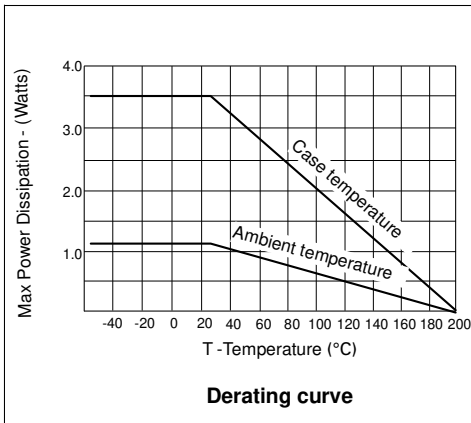
## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ )

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-690	-800	mV	$I_C = -500\text{mA}$ , $V_{CE} = -10\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	100 100 10	200 200 20	300		$I_C = -10\text{mA}$ , $V_{CE} = -10\text{V}^*$ $I_C = -500\text{mA}$ , $V_{CE} = -10\text{V}^*$ $I_C = -1\text{A}$ , $V_{CE} = -10\text{V}^*$
Transition Frequency	$f_T$		85		MHz	$I_C = -100\text{mA}$ , $V_{CE} = -10\text{V}$ $f = 50\text{MHz}$
Output Capacitance	$C_{obo}$		19		pF	$V_{CB} = -20\text{V}$ , $f = 1\text{MHz}$
Switching Times	$t_{on}$ $t_{off}$		104 2400		ns ns	$I_C = -500\text{mA}$ , $I_{B1} = -50\text{mA}$ $I_{B2} = 50\text{mA}$ , $V_{CC} = -100\text{V}$

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

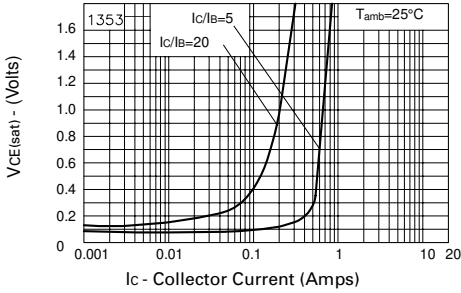
## THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient Junction to Case	$R_{th(j-amb)}$ $R_{th(j-case)}$	150 50	$^{\circ}\text{C/W}$ $^{\circ}\text{C/W}$

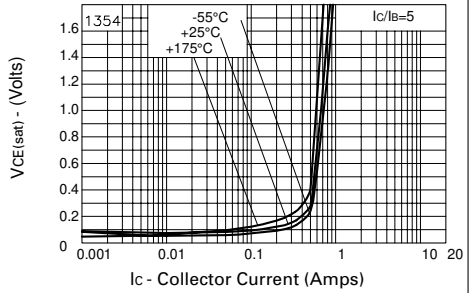


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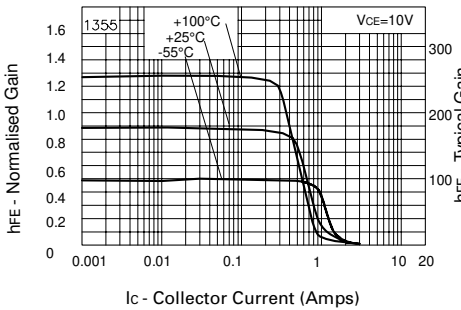
## TYPICAL CHARACTERISTICS



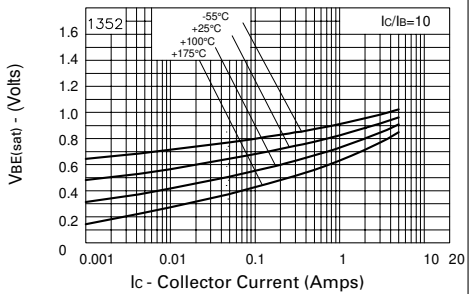
**$V_{CE(sat)}$  v  $I_C$**



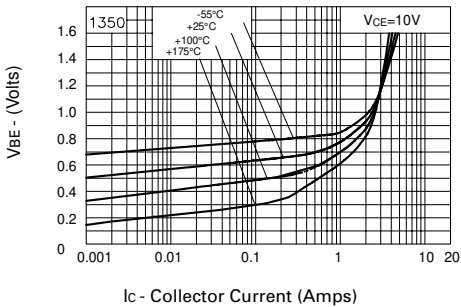
**$V_{CE(sat)}$  v  $I_C$**



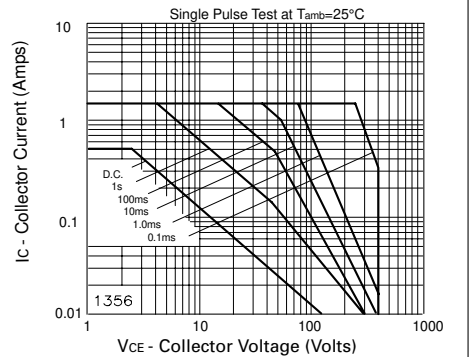
**$h_{FE}$  v  $I_C$**



**$V_{BE(sat)}$  v  $I_C$**



**$V_{BE(on)}$  v  $I_C$**



**Safe Operating Area**