

ZTX958

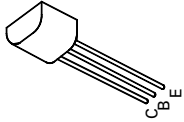
PNP SILICON PLANAR MEDIUM POWER
HIGH CURRENT TRANSISTOR

ISSUE 3 – JUNE 94

ZTX958

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

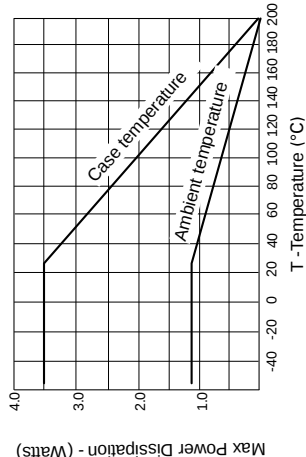
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$)

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	$V_{CE} = -20\text{V}$, $f = 1\text{MHz}$
Switching Times	t_{on} t_{off}		104 2400		ns	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$ $I_B = -50\text{mA}$, $V_{CE} = -100\text{V}$

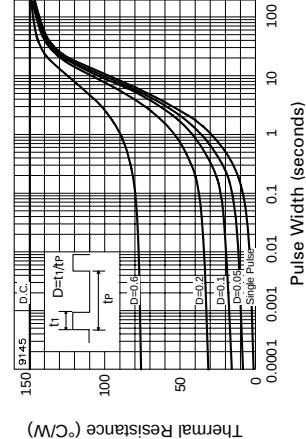
*Measured under pulsed conditions. Pulse width=300 μ s. Duty cycle $\leq 2\%$

THERMAL CHARACTERISTICS

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



Derating curve



Maximum transient thermal impedance

ABSOLUTE MAXIMUM RATINGS.

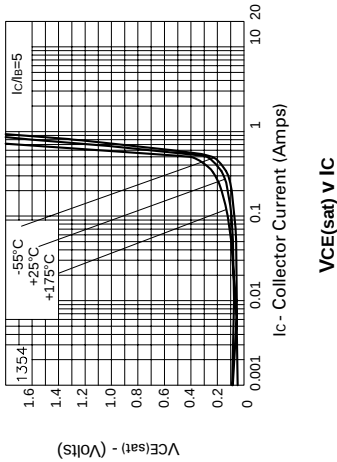
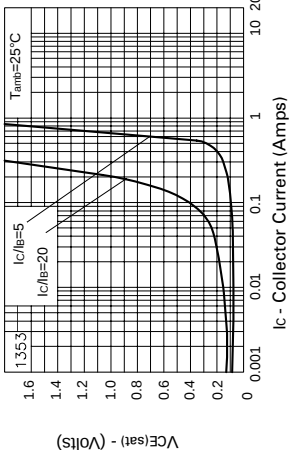
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-400	V
Collector-Emitter Voltage	V_{CEO}	-400	V
Emitter-Base Voltage	V_{EBO}	-6	V
Peak Pulse Current	I_{CM}	-1.5	A
Continuous Collector Current	I_C	-0.5	A
Practical Power Dissipation*	P_{totp}	1.58	W
Power Dissipation at $T_{amb} = 25^{\circ}\text{C}$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

*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 $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

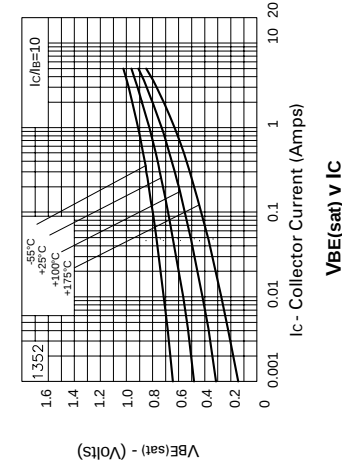
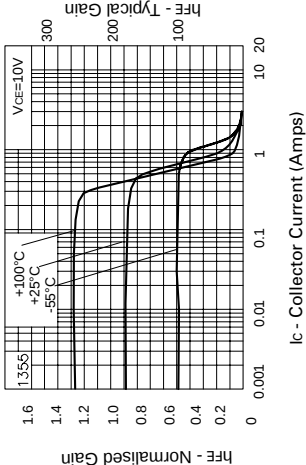
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-400	-600		V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	-400	-600		V	$I_C = -1\mu\text{A}$, $R_B \leq 1\text{K}\Omega$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-400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

TYPICAL CHARACTERISTICS



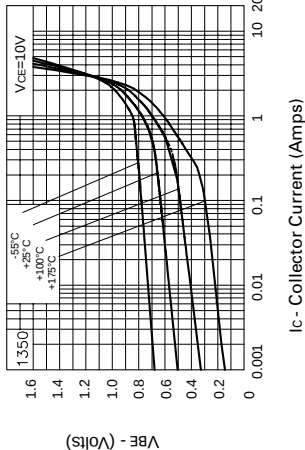
VCE(sat) v IC

VCE(sat) v IC

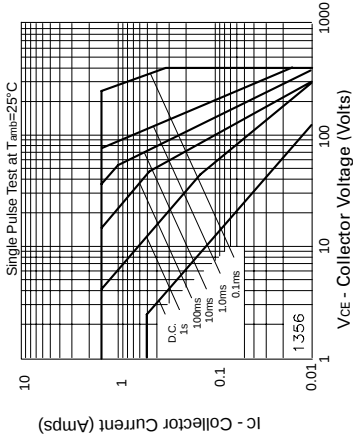


hFE v IC

VBE(sat) v IC



VBE(on) v IC



Safe Operating Area