

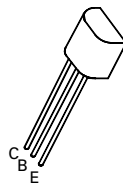
# PNP SILICON PLANAR MEDIUM POWER HIGH VOLTAGE TRANSISTOR

## ZTX558

ISSUE 1 – APRIL 94

### FEATURES

- \* 400 Volt  $V_{CE0}$
- \* 200mA continuous current
- \*  $P_{tot} = 1$  Watt



**E-Line**  
**TO92 Compatible**

### ABSOLUTE MAXIMUM RATINGS.

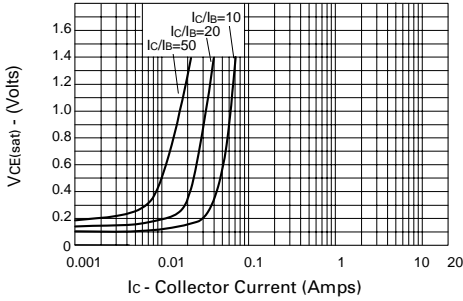
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	-400	V
Collector-Emitter Voltage	$V_{CEO}$	-400	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Continuous Collector Current	$I_C$	-200	mA
Power Dissipation	$P_{tot}$	1	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	°C

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

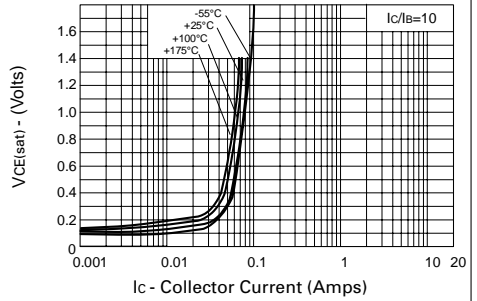
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-400			V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{BR(CEO)}$	-400			V	$I_C = -10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E = -100\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$			-100	nA	$V_{CB} = -320\text{V}$
Collector Cut-Off Current	$I_{CES}$			-100	nA	$V_{CE} = -320\text{V}$
Emitter Cut-Off Current	$I_{EBO}$			-100	nA	$V_{EB} = -4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.2 -0.5	V	$I_C = -20\text{mA}, I_B = -2\text{mA}$ $I_C = -50\text{mA}, I_B = -6\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			-0.9	V	$I_C = -50\text{mA}, I_B = -5\text{mA}$
Base-Emitter Turn On Voltage	$V_{BE(on)}$			-0.9	V	$I_C = -50\text{mA}, V_{CE} = -10\text{V}$
Static Forward Current Transfer Ratio	$h_{FE}$	100 100 15		300		$I_C = -1\text{mA}, V_{CE} = -10\text{V}$ $I_C = -50\text{mA}, V_{CE} = -10\text{V}$ $I_C = -100\text{mA}, V_{CE} = -10\text{V}^*$
Transition Frequency	$f_T$	50			MHz	$I_C = -10\text{mA}, V_{CE} = -20\text{V}$ $f = 20\text{MHz}$
Collector-Base Breakdown Voltage	$C_{obo}$			5	pF	$V_{CB} = -20\text{V}, f = 1\text{MHz}$
Switching times	$t_{on}$ $t_{off}$		95 1600		ns ns	$I_C = -50\text{mA}, V_C = -100\text{V}$ $I_{B1} = 5\text{mA}, I_{B2} = -10\text{mA}$

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

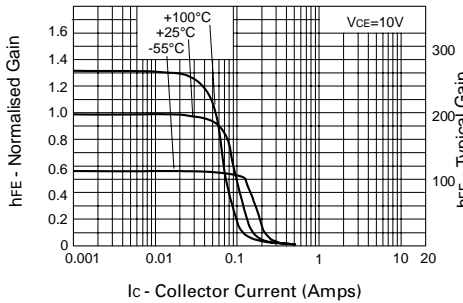
## TYPICAL CHARACTERISTICS



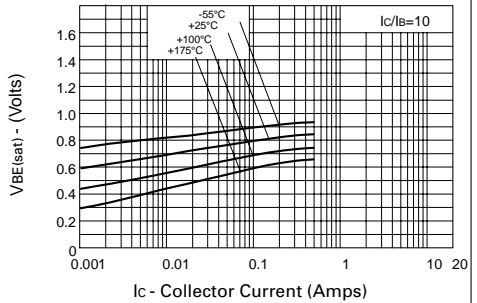
**$V_{CE(sat)}$  v  $I_C$**



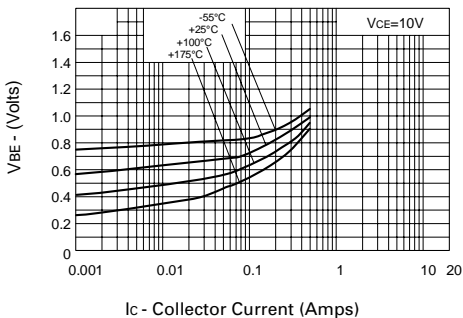
**$V_{CE(sat)}$  v  $I_C$**



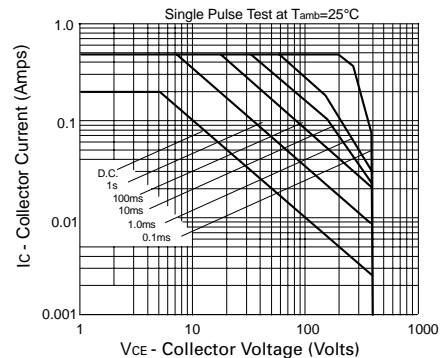
**$h_{FE}$  v  $I_C$**



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



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



**Safe Operating Area**