

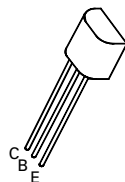
# NPN SILICON PLANAR MEDIUM POWER HIGH VOLTAGE TRANSISTOR

## ZTX458

ISSUE 2 – MARCH 1994

### FEATURES

- \* 400 Volt  $V_{CEO}$
- \* 0.5 Amp continuous current
- \*  $P_{tot} = 1$  Watt



E-Line  
TO92 Compatible

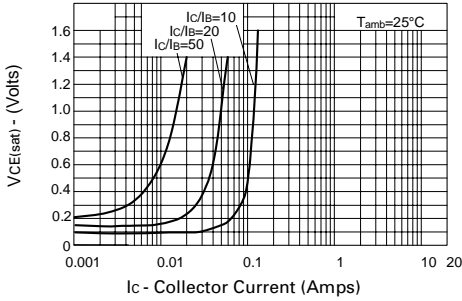
### ABSOLUTE MAXIMUM RATINGS.

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	$I_C$	300	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	$^{\circ}C$

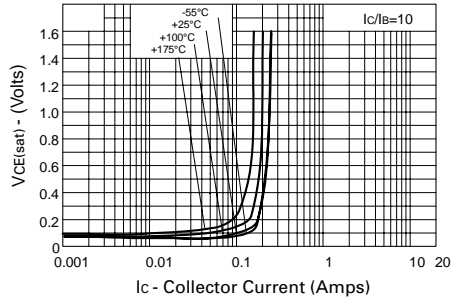
### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ ).

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

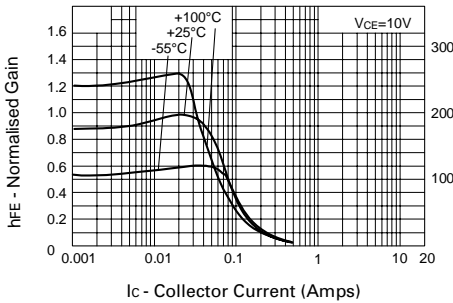
## TYPICAL CHARACTERISTICS



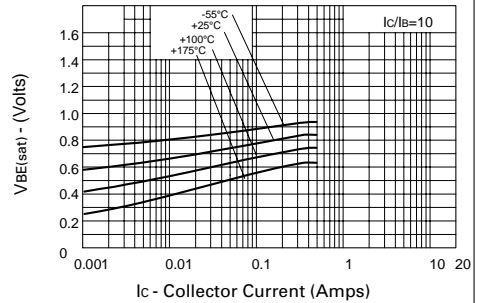
**$V_{CE(sat)}$  v  $I_C$**



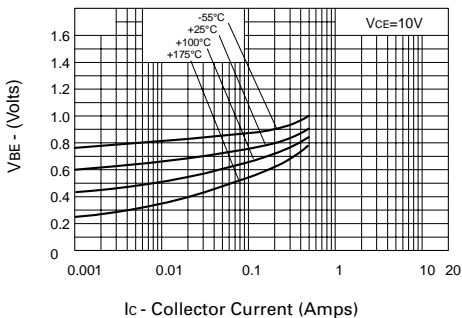
**$V_{CE(sat)}$  v  $I_C$**



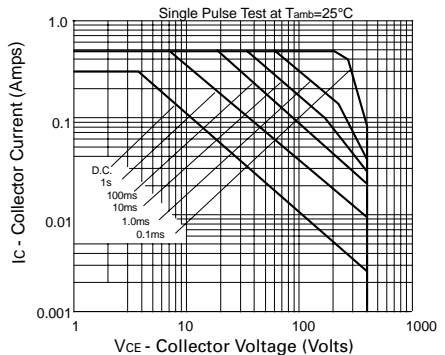
**$h_{FE}$  v  $I_C$**



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



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



**Safe Operating Area**