

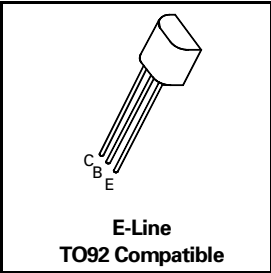
# NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

**ZTX452**  
**ZTX453**

ISSUE 2 – MARCH 1994

## FEATURES

- \* 100 Volt  $V_{CE0}$
- \* 1 Amp continuous current
- \*  $P_{tot} = 1$  Watt



## ABSOLUTE MAXIMUM RATINGS.

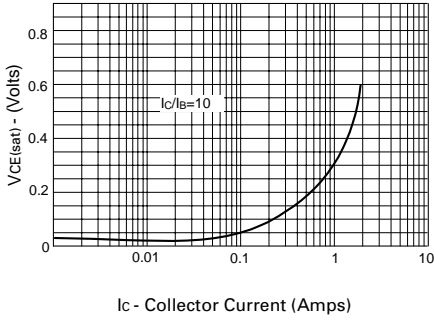
PARAMETER	SYMBOL	ZTX452	ZTX453	UNIT
Collector-Base Voltage	$V_{CBO}$	100	120	V
Collector-Emitter Voltage	$V_{CEO}$	80	100	V
Emitter-Base Voltage	$V_{EBO}$	5		V
Peak Pulse Current	$I_{CM}$	2		A
Continuous Collector Current	$I_C$	1		A
Power Dissipation at $T_{amb}=25^\circ\text{C}$	$P_{tot}$	1		W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200		$^\circ\text{C}$

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

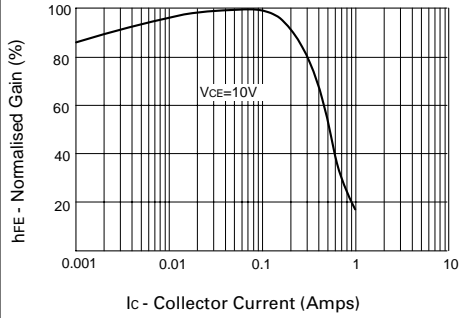
PARAMETER	SYMBOL	ZTX452		ZTX453		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	100		120		V	$I_C=100\mu\text{A}$
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	80		100		V	$I_C=10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		5		V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$		0.1		0.1	$\mu\text{A}$	$V_{CB}=80\text{V}$ $V_{CB}=100\text{V}$
Emitter Cut-Off Current	$I_{EBO}$		0.1		0.1	$\mu\text{A}$	$V_{EB}=4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.7		0.7	V	$I_C=150\text{mA}$ , $I_B=15\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.3		1.3	V	$I_C=150\text{mA}$ , $I_B=15\text{mA}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	40 10	150	40 10	200		$I_C=150\text{mA}$ , $V_{CE}=10\text{V}^*$ $I_C=1\text{A}$ , $V_{CE}=10\text{V}^*$
Transition Frequency	$f_T$	150		150		MHz	$I_C=50\text{mA}$ , $V_{CE}=10\text{V}$ $f=100\text{MHz}$
Output Capacitance	$C_{obo}$		15		15	pF	$V_{CB}=10\text{V}$ , $f=1\text{MHz}$

# ZTX452 ZTX453

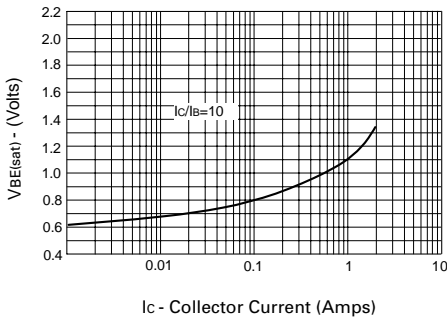
## TYPICAL CHARACTERISTICS



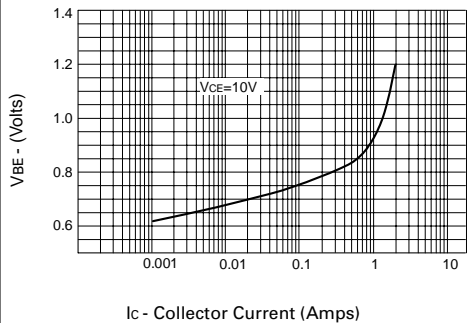
**$V_{CE(sat)}$  v  $I_C$**



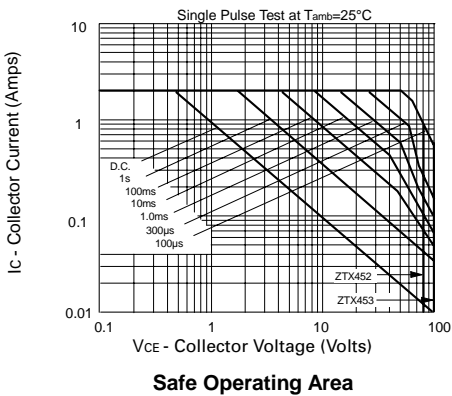
**$h_{FE}$  v  $I_C$**



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



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



**Safe Operating Area**