

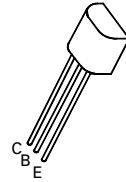
# NPN SILICON PLANAR MEDIUM POWER HIGH VOLTAGE TRANSISTORS

ISSUE 2 – JULY 94

## FEATURES

- \* 300 Volt  $V_{CE0}$
- \* 0.5 Amp continuous current
- \*  $P_{tot}=1$  Watt

# ZTX656 ZTX657



E-Line  
TO92 Compatible

## ABSOLUTE MAXIMUM RATINGS.

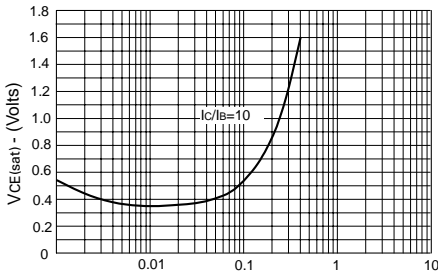
PARAMETER	SYMBOL	ZTX656	ZTX657	UNIT
Collector-Base Voltage	$V_{CBO}$	200	300	V
Collector-Emitter Voltage	$V_{CEO}$	200	300	V
Emitter-Base Voltage	$V_{EBO}$	5		V
Peak Pulse Current	$I_{CM}$	1		A
Continuous Collector Current	$I_C$	0.5		A
Power Dissipation at $T_{amb}=25^\circ\text{C}$	$P_{tot}$	1		W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200		$^\circ\text{C}$

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

PARAMETER	SYMBOL	ZTX656		ZTX657		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	200		300		V	$I_C=100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	200		300		V	$I_C=10\text{mA}, I_B=0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		5		V	$I_E=100\mu\text{A}, I_C=0$
Collector Cut-Off Current	$I_{CBO}$		100		100	nA nA	$V_{CB}=160\text{V}, I_E=0$ $V_{CB}=200\text{V}, I_E=0$
Emitter Cut-Off Current	$I_{EBO}$		100		100	nA	$V_{EB}=3\text{V}, I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.5		0.5	V	$I_C=100\text{mA}, I_B=10\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1		1	V	$I_C=100\text{mA}, I_B=10\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		1		1	V	$I_C=100\text{mA}, V_{CE}=5\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	50 40		50 40			$I_C=100\text{mA}, V_{CE}=5\text{V}$ $I_C=10\text{mA}, V_{CE}=5\text{V}$
Transition Frequency	$f_T$	30		30		MHz	$I_C=10\text{mA}, V_{CE}=20\text{V}$ $f=20\text{MHz}$

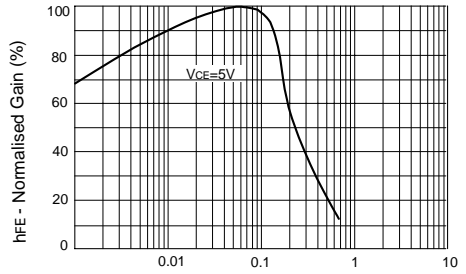
# ZTX656 ZTX657

## TYPICAL CHARACTERISTICS



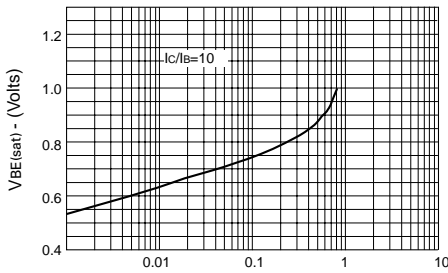
IC - Collector Current (Amps)

**VCE(sat) v IC**



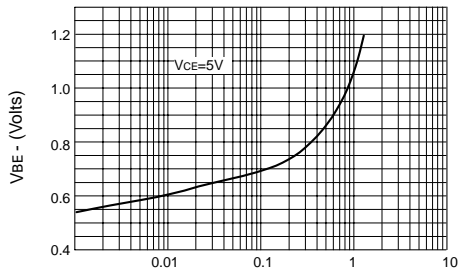
IC - Collector Current (Amps)

**hFE v IC**



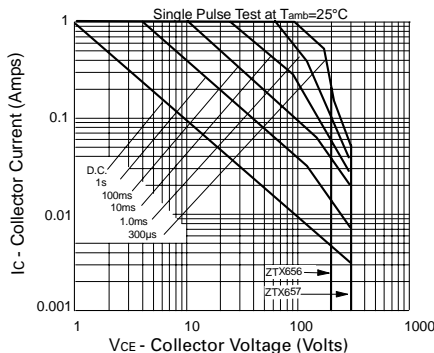
IC - Collector Current (Amps)

**VBE(sat) v IC**

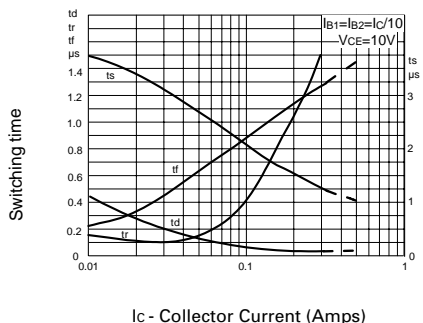


IC - Collector Current (Amps)

**VBE(v) v IC**



**Safe Operating Area**



**Switching Speeds**