

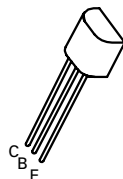
# NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

ISSUE 2 – JULY 94

## ZTX654 ZTX655

### FEATURES

- \* 150 Volt  $V_{CEO}$
- \* 1 Amp continuous current
- \* Low saturation voltage
- \*  $P_{tot} = 1$  Watt



E-Line  
TO92 Compatible

### ABSOLUTE MAXIMUM RATINGS.

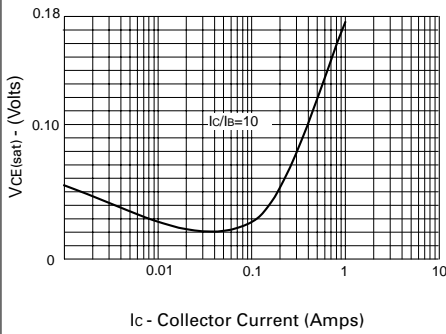
PARAMETER	SYMBOL	ZTX654	ZTX655	UNIT
Collector-Base Voltage	$V_{CBO}$	125	150	V
Collector-Emitter Voltage	$V_{CEO}$	125	150	V
Emitter-Base Voltage	$V_{EBO}$	5		V
Peak Pulse Current	$I_{CM}$	2		A
Continuous Collector Current	$I_C$	1		A
Power Dissipation at $T_{amb}=25^\circ\text{C}$	$P_{tot}$	1		W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200		$^\circ\text{C}$

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

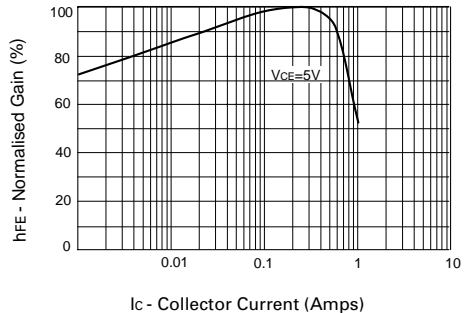
PARAMETER	SYMBOL	ZTX654		ZTX655		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	125		150		V	$I_C=100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	125		150		V	$I_C=10\text{mA}, I_B=0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		5		V	$I_E=100\mu\text{A}, I_C=0$
Collector Cut-Off Current	$I_{CBO}$		100		100	nA	$V_{CB}=100\text{V}, I_E=0$ $V_{CB}=125\text{V}, I_E=0$
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		0.5 0.5	V	$I_C=500\text{mA}, I_B=50\text{mA}^*$ $I_C=1\text{A}, I_B=200\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.1		1.1	V	$I_C=500\text{mA}, I_B=50\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		1.0		1.0	V	$I_C=500\text{mA}, V_{CE}=5\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	50 50 20		50 50 20			$I_C=10\text{mA}, V_{CE}=5\text{V}$ $I_C=500\text{mA}, V_{CE}=5\text{V}^*$ $I_C=1\text{A}, V_{CE}=5\text{V}^*$
Transition Frequency	$f_T$	30		30		MHz	$I_C=10\text{mA}, V_{CE}=20\text{V}$ $f=20\text{MHz}$
Output Capacitance	$C_{obo}$		20		20	pF	$V_{CB}=20\text{V}, f=1\text{MHz}$

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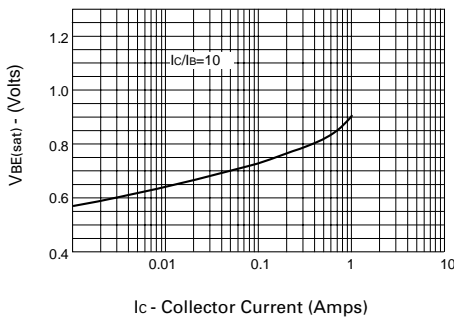
## TYPICAL CHARACTERISTICS



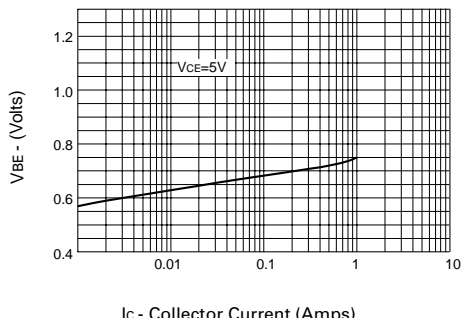
**$V_{CE(sat)}$  v  $I_C$**



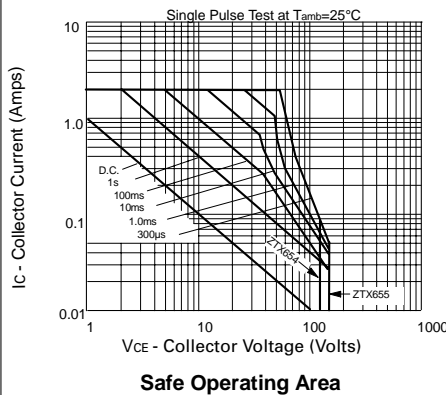
**hFE v  $I_C$**



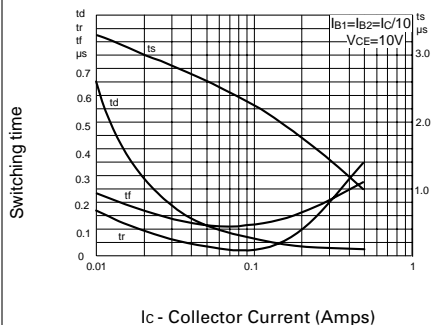
**$V_{BE(sat)}$  v  $I_C$**



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



**Safe Operating Area**



**Switching Speeds**