

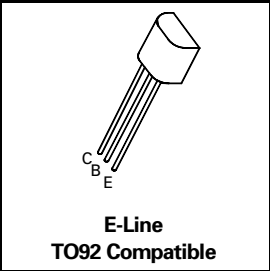
# NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

**ZTX454**  
**ZTX455**

ISSUE 2 – MARCH 1994

**FEATURES**

- \* 140 Volt  $V_{CE0}$
- \* 1 Amp continuous current
- \*  $P_{tot} = 1$  Watt



**ABSOLUTE MAXIMUM RATINGS.**

PARAMETER	SYMBOL	ZTX454	ZTX455	UNIT
Collector-Base Voltage	$V_{CBO}$	140	160	V
Collector-Emitter Voltage	$V_{CEO}$	120	140	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 $T_{amb}=25^{\circ}C$	$P_{tot}$	1		W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200		$^{\circ}C$

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

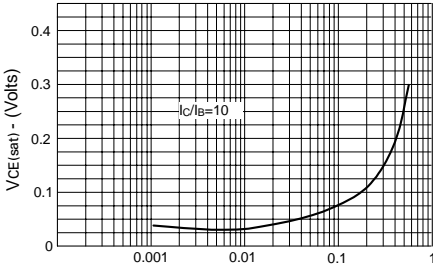
PARAMETER	SYMBOL	ZTX454		ZTX455		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	140		160		V	$I_C = 100\mu A$
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	120		140		V	$I_C = 10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		5		V	$I_E = 100\mu A$
Collector Cut-Off Current	$I_{CBO}$		0.1		0.1	$\mu A$ $\mu A$	$V_{CB} = 140V$ $V_{CE} = 120V$
Emitter Cut-Off Current	$I_{EBO}$		0.1		0.1	$\mu A$	$V_{EB} = 4V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.7 1.0		0.7	V	$I_C = 150mA, I_B = 15mA$ $I_C = 200mA, I_B = 20mA$
Static Forward Current Transfer Ratio	$h_{FE}$	100 30 10†	300	100 10†	300		$I_C = 150mA, V_{CE} = 10V^*$ $I_C = 200mA, V_{CE} = 1V^*$ $I_C = 1A, V_{CE} = 10V^*$
Transition Frequency	$f_T$	100		100		MHz	$I_C = 50mA, V_{CE} = 10V$ $f = 100MHz$
Output Capacitance	$C_{obo}$		15		15	pF	$V_{CB} = 10V, f = 1MHz$

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

† Typical

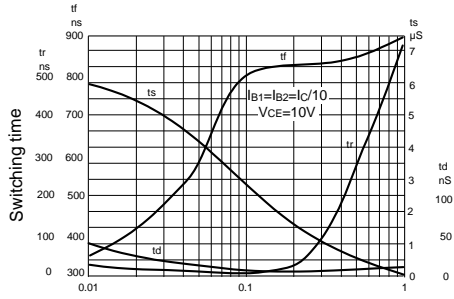
# ZTX454 ZTX455

## TYPICAL CHARACTERISTICS



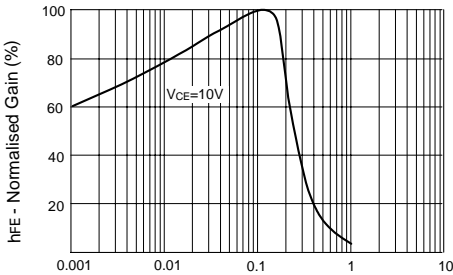
IC - Collector Current (Amps)

**VCE(sat) v IC**



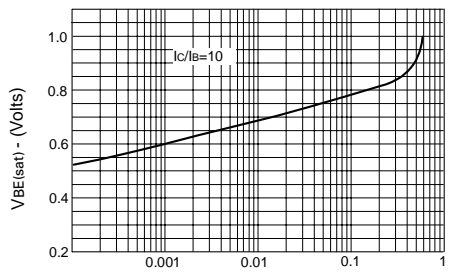
IC - Collector Current (Amps)

**Typical Switching Speeds**



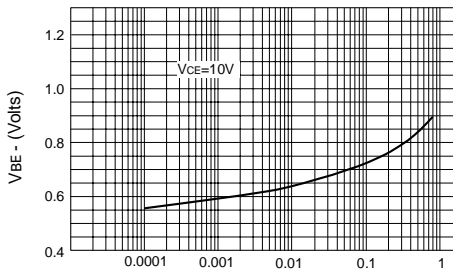
IC - Collector Current (Amps)

**hFE v IC**



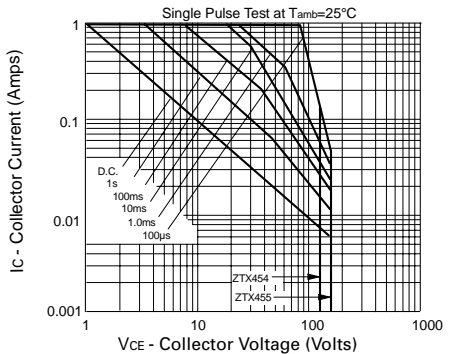
IC - Collector Current (Amps)

**VBE(sat) v IC**



IC - Collector Current (Amps)

**VBE(on) v IC**



**Safe Operating Area**