

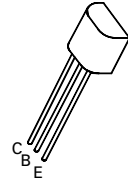
NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

ZTX454 ZTX455

ISSUE 2 – MARCH 1994

FEATURES

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



E-Line
TO92 Compatible

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 $T_{amb}=25^\circ\text{C}$	P_{tot}	1		W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200		$^\circ\text{C}$

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

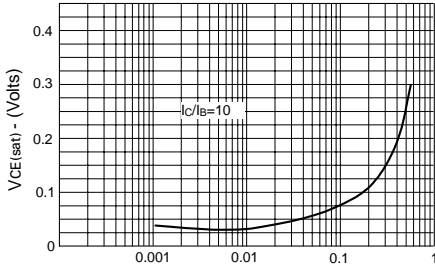
PARAMETER	SYMBOL	ZTX454		ZTX455		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	140		160		V	$I_C = 100\mu\text{A}$
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	120		140		V	$I_C = 10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		5		V	$I_E =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

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

† Typical

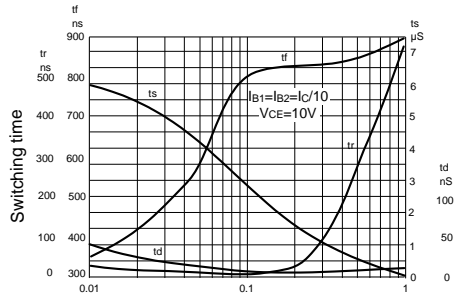
ZTX454 ZTX455

TYPICAL CHARACTERISTICS



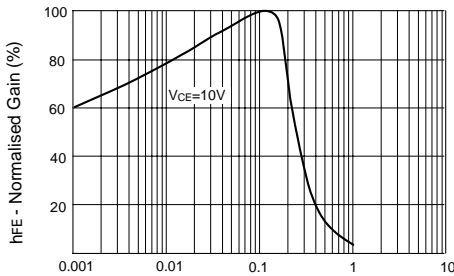
I_C - Collector Current (Amps)

$V_{CE(sat)}$ v I_C



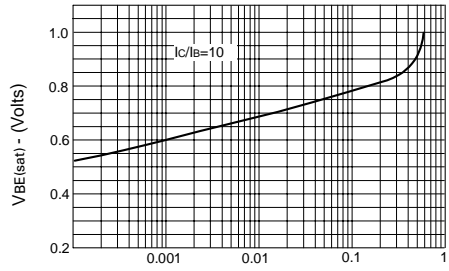
I_C - Collector Current (Amps)

Typical Switching Speeds



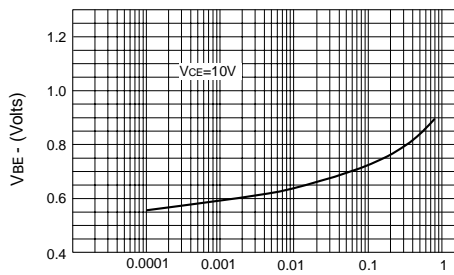
I_C - Collector Current (Amps)

h_{FE} v I_C



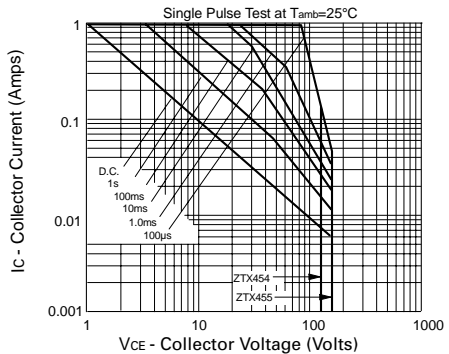
I_C - Collector Current (Amps)

$V_{BE(sat)}$ v I_C



I_C - Collector Current (Amps)

$V_{BE(on)}$ v I_C



Safe Operating Area