

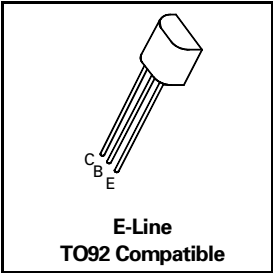
NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

ZTX449

ISSUE 2 – MARCH 1994

FEATURES

- * 30 Volt V_{CEO}
- * 1 Amp continuous current
- * P_{tot} = 1 Watt



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	30	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	$^{\circ}C$

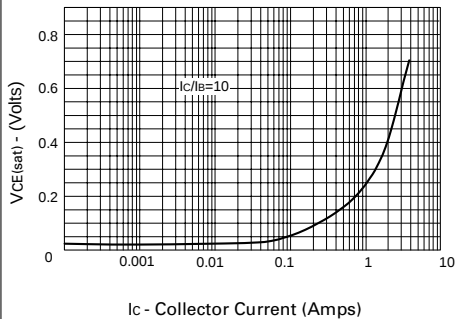
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			V	$I_C=100\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30			V	$I_C=10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=100\mu A, I_C=0$
Collector Cut-Off Current	I_{CBO}			0.1 10	μA μA	$V_{CB}=40V$ $V_{CB}=40V, T_{amb}=100^{\circ}C$
Emitter Cut-Off Current	I_{EBO}			0.1	μA	$V_{EB}=4V, I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.5 1	V V	$I_C=1A, I_B=100mA^*$ $I_C=2A, I_B=200mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.25	V	$I_C=1A, I_B=100mA^*$
Base-Emitter Turn-on Voltage	$V_{BE(on)}$			1	V	$I_C=1A, V_{CE}=2V^*$
Static Forward Current Transfer Ratio	h_{FE}	70 100 80 40		300		$I_C=50mA, V_{CE}=2V^*$ $I_C=500mA, V_{CE}=2V^*$ $I_C=1A, V_{CE}=2V^*$ $I_C=2A, V_{CE}=2V^*$
Transition Frequency	f_T	150			MHz	$I_C=50mA, V_{CE}=10V$ $f=100MHz$
Output Capacitance	C_{obo}			15	pF	$V_{CB}=10V, f=1MHz$

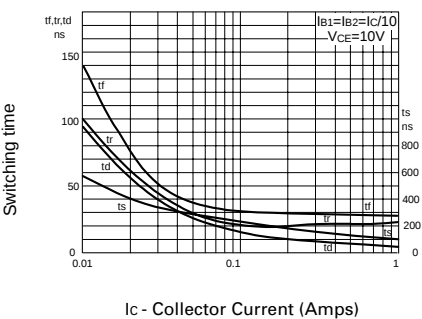
*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$

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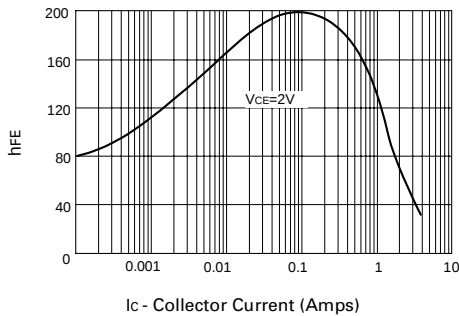
TYPICAL CHARACTERISTICS



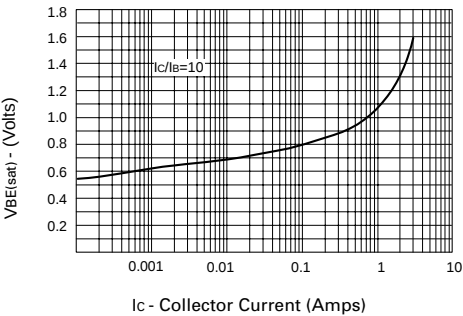
$V_{CE(sat)}$ v I_C



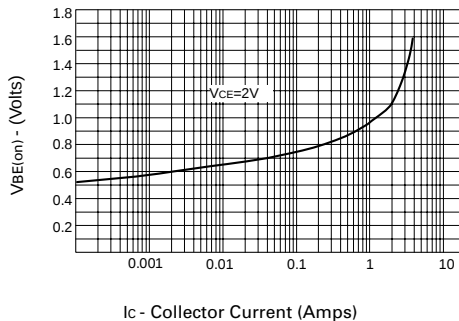
Switching Speeds



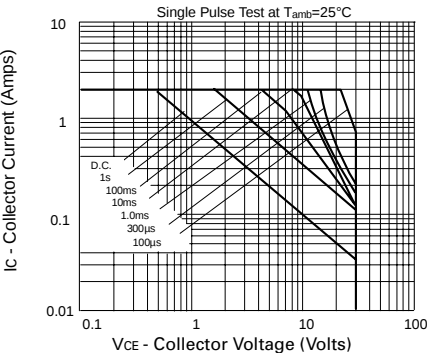
h_{FE} v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



Safe Operating Area