

PNP SILICON PLANAR MEDIUM POWER TRANSISTORS

ZTX549 ZTX549A

ISSUE 1 – MARCH 94

FEATURES

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



**E-Line
TO92 Compatible**

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-35	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 $T_{amb}=25^\circ\text{C}$ derate above 25°C	P_{tot}	1 5.7	W mW/ $^\circ\text{C}$
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	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-35			V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-30			V	$I_C = -10\text{mA}$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E = -100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}			-0.1 -10	μA μA	$V_{CB} = -30\text{V}$ $V_{CB} = -30\text{V}, T_{amb} = 100^\circ\text{C}$
Emitter Cut-Off Current	I_{EBO}			-0.1	μA	$V_{EB} = -4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-0.25 -0.50	-0.50 -0.75	V V	$I_C = -1\text{A}, I_B = -100\text{mA}^*$ $I_C = -2\text{A}, I_B = -200\text{mA}^*$
	ZTX549A			-0.30	V	$I_C = -100\text{mA}, I_B = -1\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-0.9	-1.25	V	$I_C = -1\text{A}, I_B = -100\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(on)}$		-0.85	-1	V	$I_C = -1\text{A}, V_{CE} = -2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	70 80 40	200 130 80			$I_C = -50\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -1\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -2\text{A}, V_{CE} = -2\text{V}^*$
	ZTX549		100	160	300	$I_C = -500\text{mA}, V_{CE} = -2\text{V}^*$
	ZTX549A		150	200	500	$I_C = -500\text{mA}, V_{CE} = -2\text{V}^*$

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

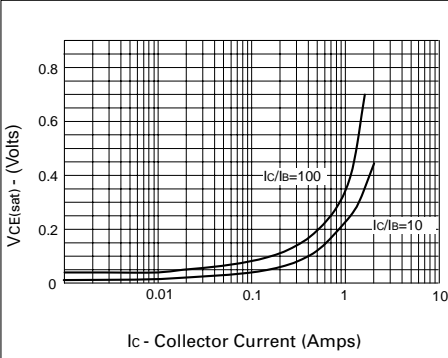
ZTX549 ZTX549A

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

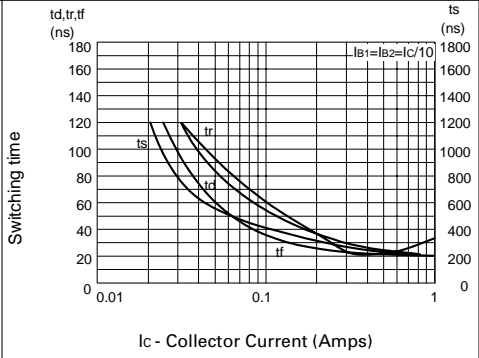
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f_T	100			MHz	$I_C = 100\text{mA}$, $V_{CE} = 5\text{V}$ $f = 100\text{MHz}$
Output Capacitance	C_{obo}			25	pF	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$
Switching Times	t_{on}		300		ns	$I_C = 500\text{mA}$, $V_{CC} = 10\text{V}$ $I_{B1} = I_{B2} = 50\text{mA}$
	t_{off}		50		ns	

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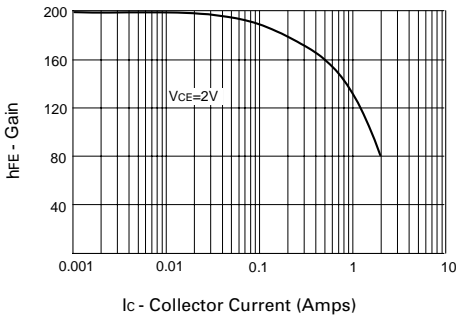
TYPICAL CHARACTERISTICS



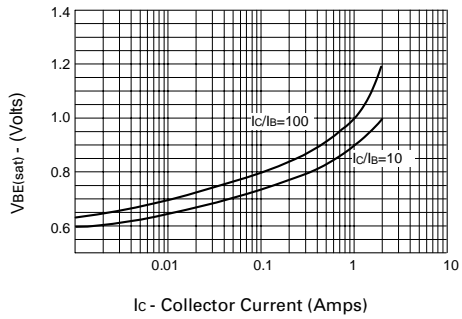
$V_{CE(sat)}$ v I_C



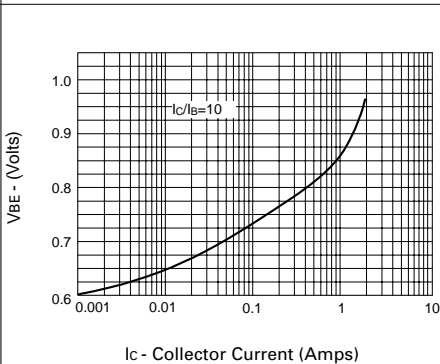
Switching Speeds



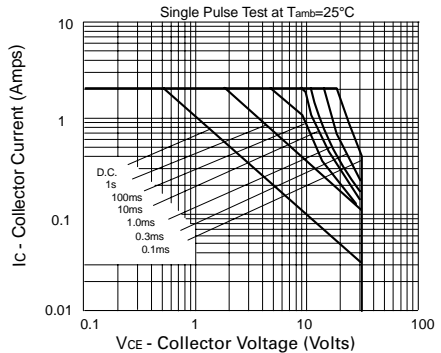
h_{FE} v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



Safe Operating Area