

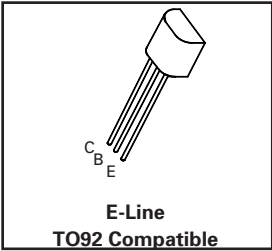
PNP SILICON PLANAR MEDIUM POWER TRANSISTORS

ZTX750 ZTX751

ISSUE 3 – JULY 2005

FEATURES

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



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	ZTX750	ZTX751	UNIT
Collector-Base Voltage	V_{CBO}	-60	-80	V
Collector-Emitter Voltage	V_{CEO}	-45	-60	V
Emitter-Base Voltage	V_{EBO}		-5	V
Peak Pulse Current	I_{CM}		-6	A
Continuous Collector Current	I_C		-2	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	ZTX750			ZTX751			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60			-80			V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-45			-60			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 -10			-0.1 -10	μA μA μA	$V_{CB} = -45\text{V}$ $V_{CB} = -60\text{V}$ $V_{CB} = -45\text{V}, T_{amb} = 100^\circ\text{C}$ $V_{CB} = -60\text{V}, T_{amb} = 100^\circ\text{C}$
Emitter Cut-Off Current	I_{EBO}			-0.1			-0.1	μA	$V_{EB} = -4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-0.15 -0.28	-0.3 -0.5		-0.15 -0.28	-0.3 -0.5	V	$I_C = -1\text{A}, I_B = -100\text{mA}$ $I_C = -2\text{A}, I_B = -200\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-0.9	-1.25		-0.9	-1.25	V	$I_C = -1\text{A}, I_B = -100\text{mA}$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-0.8	-1		-0.8	-1	V	$I_C = -1\text{A}, V_{CE} = -2\text{V}$
Static Forward Current Transfer Ratio	h_{FE}	70 100 80 40	200 200 170 80	300	70 100 80 40	200 200 170 80	300		$I_C = -50\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -500\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -1\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -2\text{A}, V_{CE} = -2\text{V}^*$
Switching Times	t_{on} t_{off}		45 800			45 800			$I_C = 500\text{mA}, V_{CC} = 10\text{V}$ $I_{B1} = I_{B2} = 50\text{mA}$
Output Capacitance	C_{obo}			30			30	pF	$V_{CB} = 10\text{V}, f = 1\text{MHz}$

ZTX750 ZTX751

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

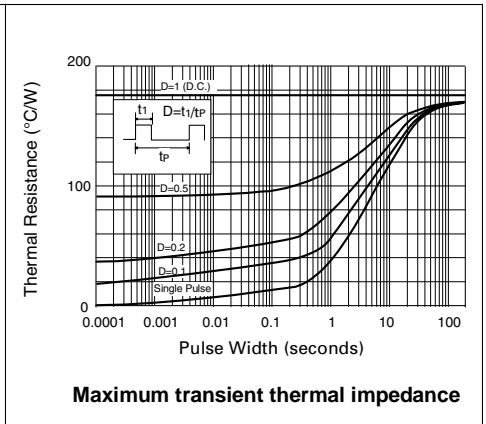
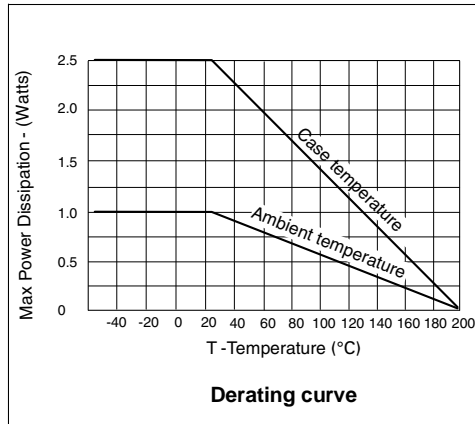
PARAMETER	SYMBOL	ZTX750			ZTX751			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Transition Frequency	f_T	100	140		100	140		MHz	$I_C = -100\text{mA}$, $V_{CE} = -5\text{V}$ $f = 100\text{MHz}$
Switching Times	t_{on}		40			40		ns	$I_C = -500\text{mA}$, $V_{CC} = -10\text{V}$ $I_{B1} = I_{B2} = -50\text{mA}$
	t_{off}		450			450		ns	
Output Capacitance	C_{obo}			30			30	pF	$V_{CB} = 10\text{V}$ $f = 1\text{MHz}$

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

THERMAL CHARACTERISTICS

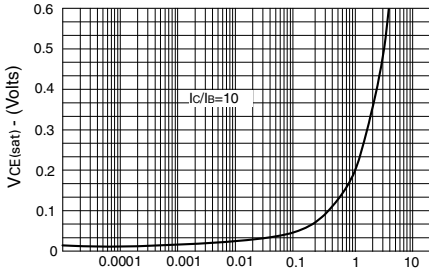
PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient ₁	$R_{th(j-amb)1}$	175	$^{\circ}\text{C/W}$
Junction to Ambient ₂	$R_{th(j-amb)2} \dagger$	116	$^{\circ}\text{C/W}$
Junction to Case	$R_{th(j-case)}$	70	$^{\circ}\text{C/W}$

\dagger Device mounted on P.C.B. with copper equal to 1 sq. Inch minimum.



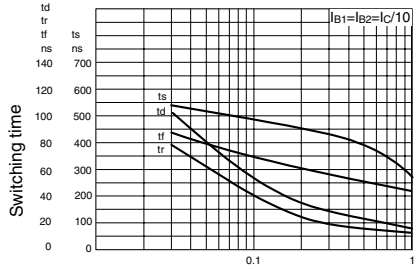
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TYPICAL CHARACTERISTICS



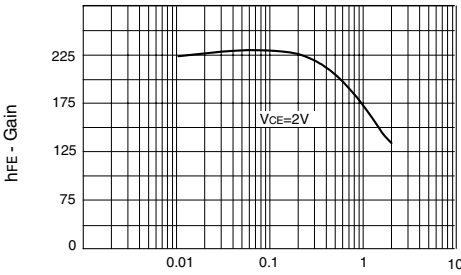
I_C - Collector Current (Amps)

$V_{CE(sat)}$ v I_C



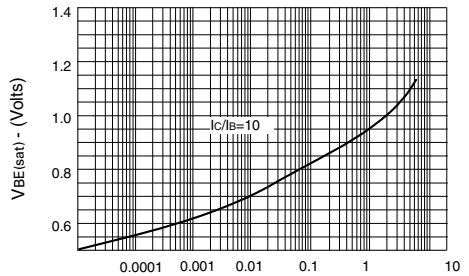
I_C - Collector Current (Amps)

Switching Speeds



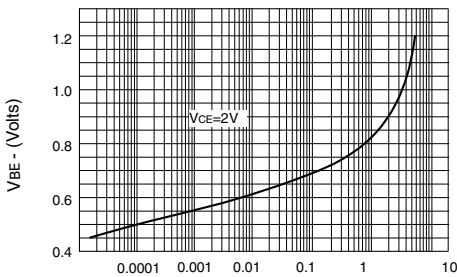
I_C - Collector Current (Amps)

h_{FE} v I_C



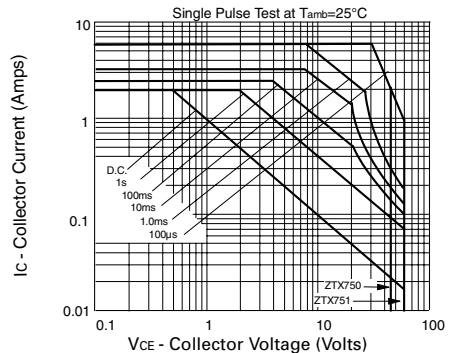
I_C - Collector Current (Amps)

$V_{BE(sat)}$ v I_C



I_C - Collector Current (Amps)

$V_{BE(on)}$ v I_C



V_{CE} - Collector Voltage (Volts)

Safe Operating Area