

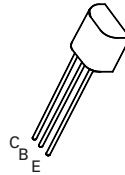
PNP SILICON PLANAR MEDIUM POWER TRANSISTORS

ISSUE 3 – JULY 2005

FEATURES

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

ZTX750 ZTX751



E-Line
TO92 Compatible

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 $T_{amb}=25^{\circ}C$ derate above $25^{\circ}C$	P_{tot}	1 5.7		W mW/ $^{\circ}C$
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	ZTX750			ZTX751			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60			-80			V	$I_C = -100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-45			-60			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 -10			-0.1 -10	μA μA μA μA	$V_{CB} = -45V$ $V_{CB} = -60V$ $V_{CB} = -45V, T_{amb} = 100^{\circ}C$ $V_{CB} = -60V, T_{amb} = 100^{\circ}C$
Emitter Cut-Off Current	I_{EBO}			-0.1			-0.1	μA	$V_{EB} = -4V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-0.15 -0.28	-0.3 -0.5		-0.15 -0.28	-0.3 -0.5	V V	$I_C = -1A, I_B = -100mA$ $I_C = -2A, I_B = -200mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-0.9	-1.25		-0.9	-1.25	V	$I_C = -1A, I_B = -100mA$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-0.8	-1		-0.8	-1	V	$I_C = -1A, V_{CE} = -2V$
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		$I_C = -50mA, V_{CE} = -2V^*$ $I_C = -500mA, V_{CE} = -2V^*$ $I_C = -1A, V_{CE} = -2V^*$ $I_C = -2A, V_{CE} = -2V^*$
Switching Times	t_{on}		45			45			$I_C = 500mA, V_{CC} = 10V$
	t_{off}		800			800			$I_{B1} = I_{B2} = 50mA$
Output Capacitance	C_{obo}			30			30	pF	$V_{CB} = 10V, f = 1MHz$

ZTX750 ZTX751

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

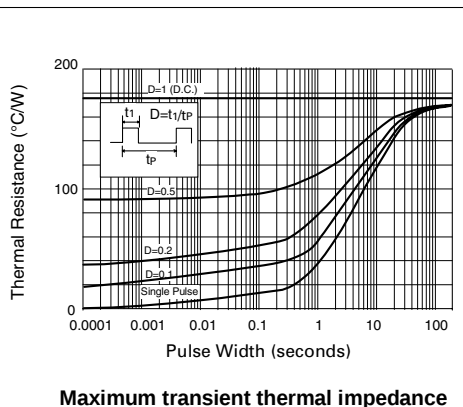
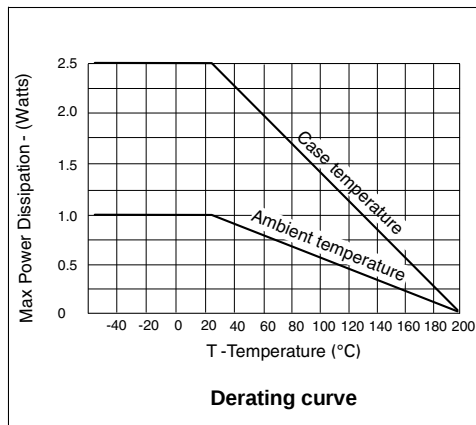
PARAMETER	SYMBOL	ZTX750			ZTX751			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Transition Frequency	f_T	100	140		100	140		MHz	$I_C = -100\text{mA}$, $V_{CE} = -5\text{V}$ $f = 100\text{MHz}$
Switching Times	t_{on}		40			40		ns	$I_C = -500\text{mA}$, $V_{CC} = -10\text{V}$ $I_{B1} = I_{B2} = -50\text{mA}$
	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	$^{\circ}\text{C/W}$

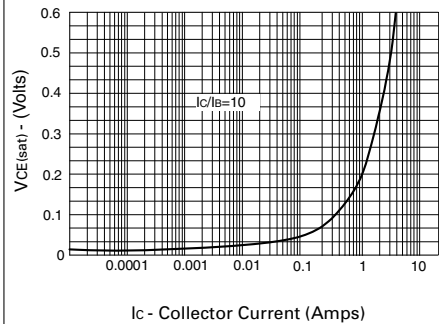
$\dagger$ Device mounted on P.C.B. with copper equal to 1 sq. Inch minimum.



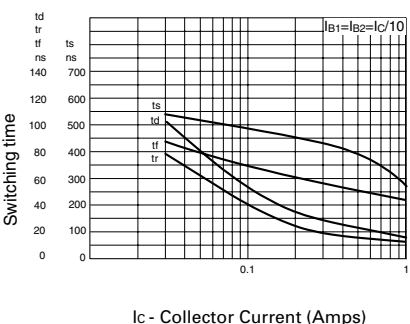
ZTX750

ZTX751

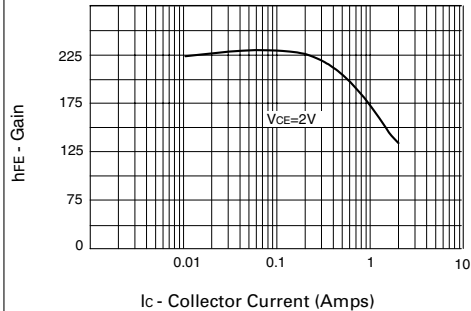
TYPICAL CHARACTERISTICS



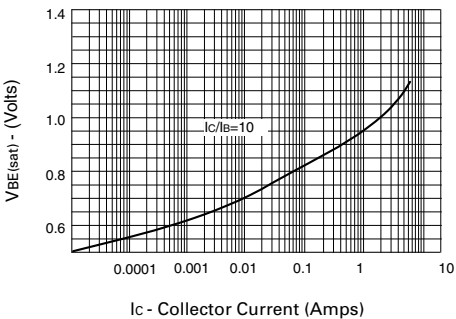
VCE(sat) v IC



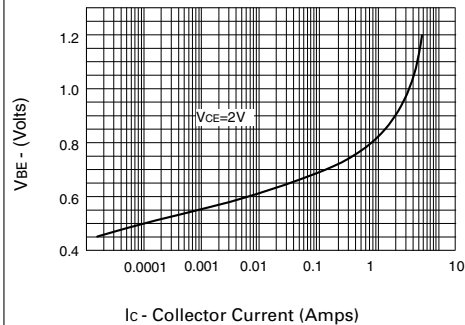
Switching Speeds



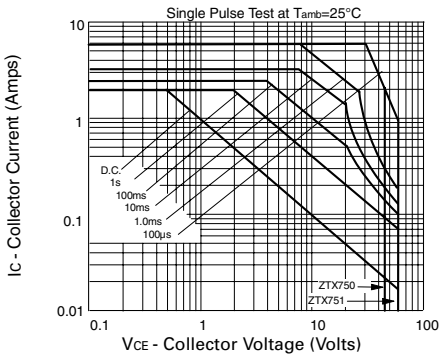
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area