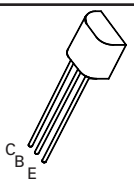
PNP SILICON PLANAR MEDIUM POWER TRANSISTORS

ZTX750 ZTX751

ISSUE 3 – JULY 2005

FEATURES

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



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°C derate above 25°C	P_{tot}	1 5.7		W mW/°C
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +200		°C

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°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=-100µA
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=-100µA
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°C V_{CB}=-60V,T_{amb}=100°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	IC=-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°C unless otherwise stated).

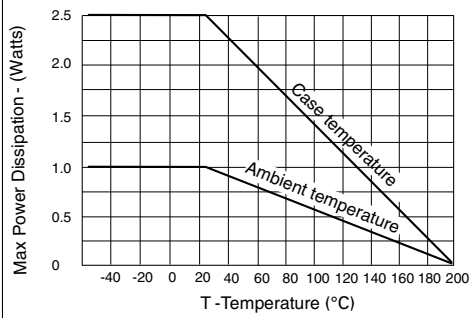
PARAMETER	SYMBOL	ZTX750			ZTX751			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Transition Frequency	f_T	100	140		100	140		MHz	I_C=-100mA, V_{CE}=-5V f=100MHz
Switching Times	t_{on}		40			40		ns	I_C=-500mA, V_{CC}=-10V I_{B1}=I_{B2}=-50mA
	t_{off}		450			450		ns	
Output Capacitance	C_{obo}			30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

*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤ 2%

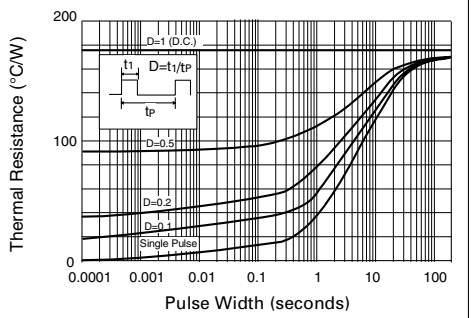
THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance:Junction to Ambient$_1$	$R_{th(j\text{-}amb)1}$	175	°C/W
Junction to Ambient$_2$	$R_{th(j\text{-}amb)2}$†	116	°C/W
Junction to Case	$R_{th(j\text{-}case)}$	70	°C/W

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

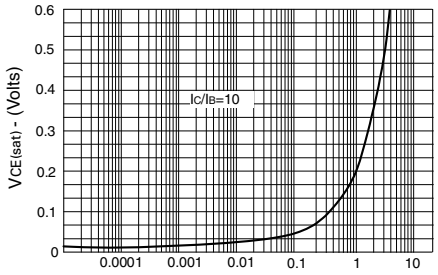


Derating curve

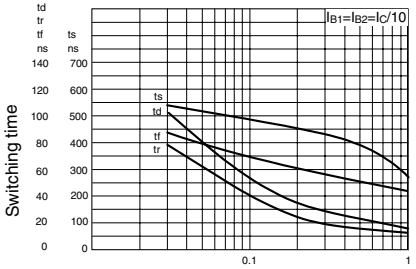


Maximum transient thermal impedance

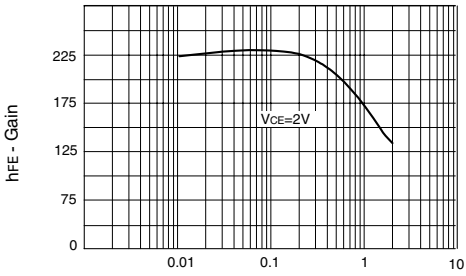
TYPICAL CHARACTERISTICS



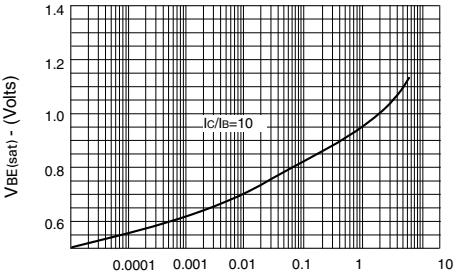
VCE(sat) v IC



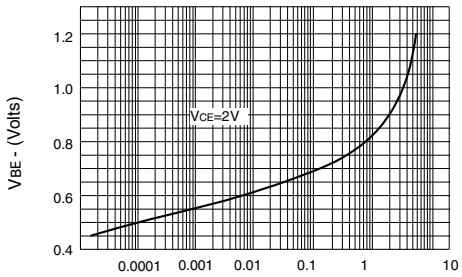
Switching Speeds



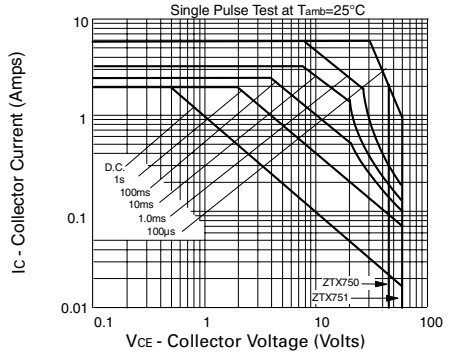
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area