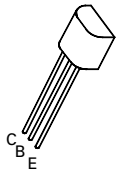
PNP SILICON PLANAR MEDIUM POWER TRANSISTOR

ZTX749

ISSUE 1 – APRIL 94

FEATURES

* 25 Volt V_{CEO}
* 2 Amp continuous current
* Low saturation voltage



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-35	V
Collector-Emitter Voltage	V_{CEO}	-25	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	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-35			V	I_C=-100μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-25			V	I_C=-10mA, I_B=0*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	I_E=-100μA, I_C=0
Collector Cut-Off Current	I_{CBO}			-0.1 -10	μA μA	V_{CB}=-30V V_{CB}=-30V,T_{amb}=100°C
Emitter Cut-Off Current	I_{EBO}			-0.1	μA	V_{EB}=-4V, I_E=0
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-0.12 -0.23	-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	V	I_C=1A, I_B=-100mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-0.8	-1	V	IC=-1A, V_{CE}=-2V*
Static Forward Current Transfer Ratio	h_{FE}	70 100 75 15	200 200 150 50	300		I_C=-50mA, V_{CE}=-2V* I_C=-1A, V_{CE}=-2V* I_C=-2A, V_{CE}=-2V* I_C=-6A, V_{CE}=-2V*

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

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

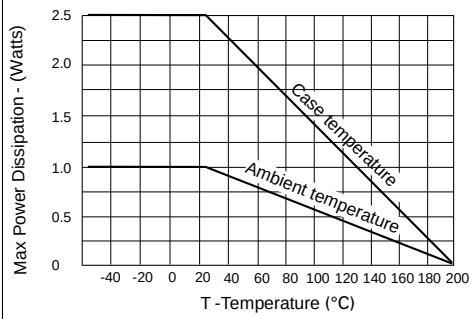
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f_T	100	160		MHz	I_C=-100mA, V_{CE}=-5V f=100MHz
Output Cpacitance	C_{obo}		55	100	pF	V_{CB}=-10V f=1MHz
Switching Times	t_{on}		40		ns	I_C=-500mA, V_{CC}=-10V I_{B1}=I_{B2}=-50mA
	t_{off}		450		ns	

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

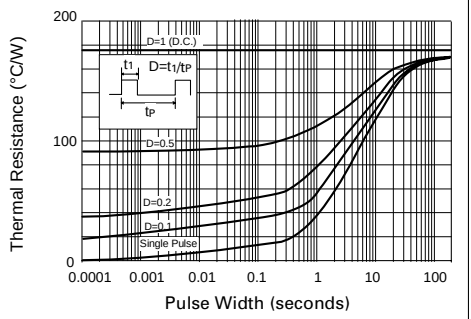
THERMAL CHARACTERISTICS

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.



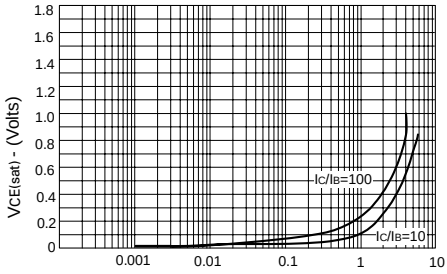
Derating curve



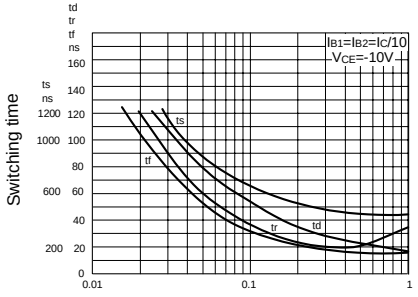
Maximum transient thermal impedance

ZTX749

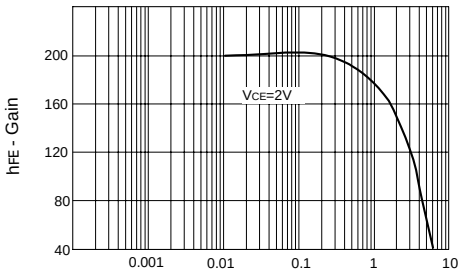
TYPICAL CHARACTERISTICS



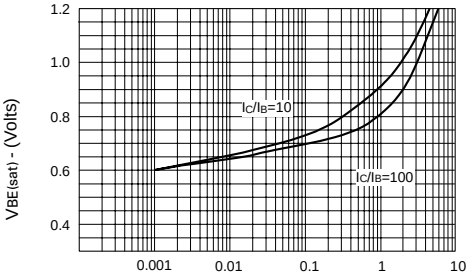
VCE(sat) v IC



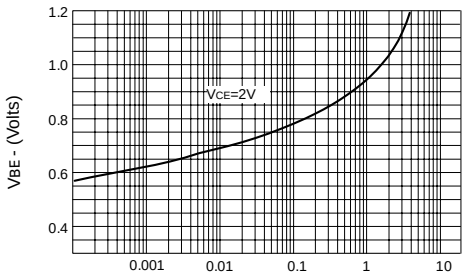
Switching Speeds



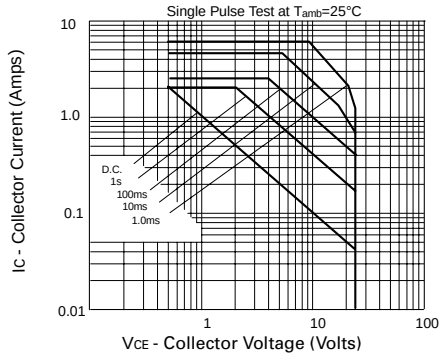
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area