

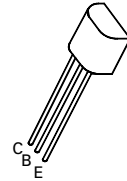
PNP SILICON PLANAR MEDIUM POWER TRANSISTORS

ISSUE 2 – JULY 94

FEATURES

- * 100 Volt V_{CE0}
- * 2 Amp continuous current
- * Low saturation voltage
- * $P_{tot}=1$ Watt

ZTX752
ZTX753



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	ZTX752	ZTX753	UNIT
Collector-Base Voltage	V_{CBO}	-100	-120	V
Collector-Emitter Voltage	V_{CEO}	-80	-100	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	ZTX752			ZTX753			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-100			-120			V	$I_C=-100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-80			-100			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	$V_{CB}=-80V$ $V_{CB}=-100V$ $V_{CB}=-80V, T_{amb}=100^{\circ}C$ $V_{CB}=-100V, T_{amb}=100^{\circ}C$
Emitter Cut-Off Current	I_{EBO}			-0.1			-0.1	μA	$V_{EB}=-4V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-0.17 -0.30	-0.3 -0.5		-0.17 -0.30	-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	$I_C=-1A, V_{CE}=-2V^*$

ZTX752 ZTX753

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

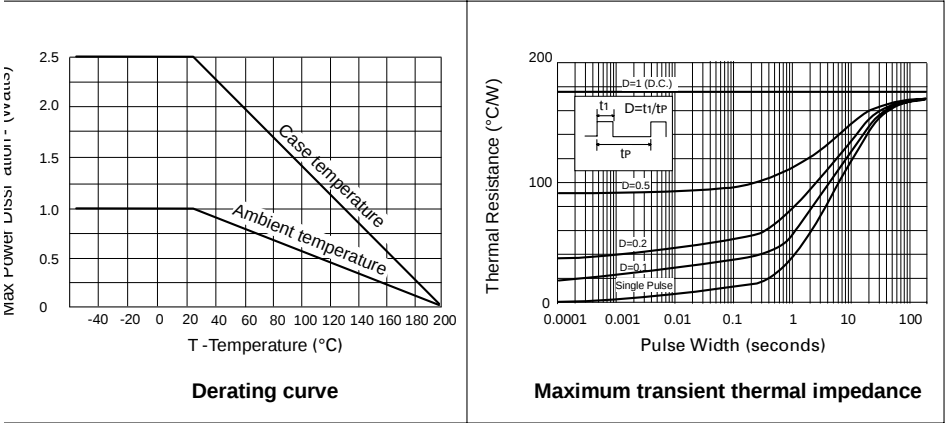
PARAMETER	SYMBOL	ZTX752			ZTX753			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Transition Frequency	f _T	100	140		100	140		MHz	I _C =-100mA, V _{CE} =-5V f=100MHz
Switching Times	t _{on}		40			40		ns	I _C =-500mA, V _{CC} =-10V I _{B1} =I _{B2} =-50mA
	t _{off}		600			600		ns	
Output Capacitance	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-amb)1}	175	°C/W
Junction to Ambient ₂	R _{th(j-amb)2} †	116	°C/W
Junction to Case	R _{th(j-case)}	70	°C/W

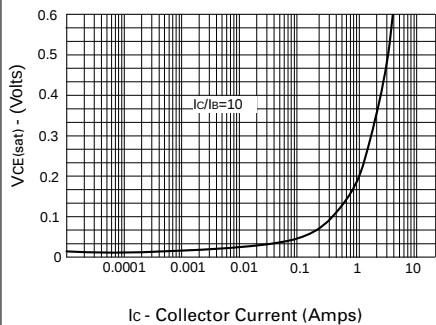
† Device mounted on P.C.B. with copper equal to 1 sq. Inch minimum.



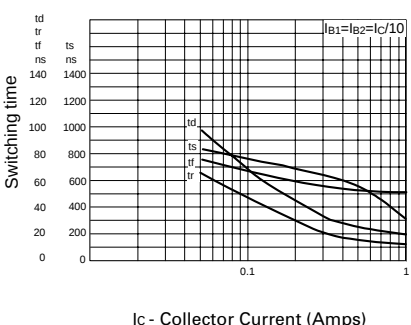
ZTX752

ZTX753

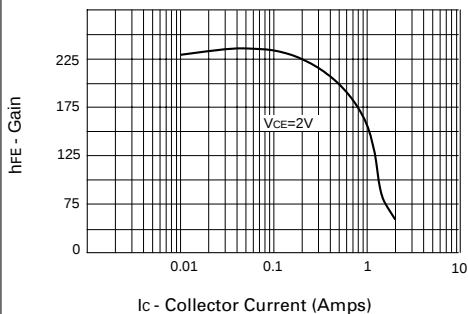
TYPICAL CHARACTERISTICS



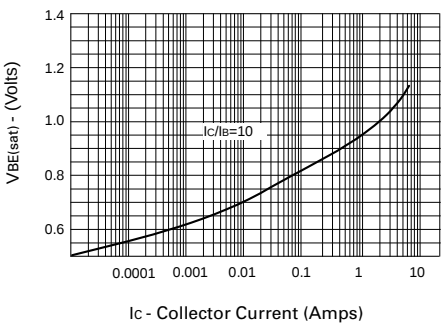
$V_{CE(sat)}$ v I_C



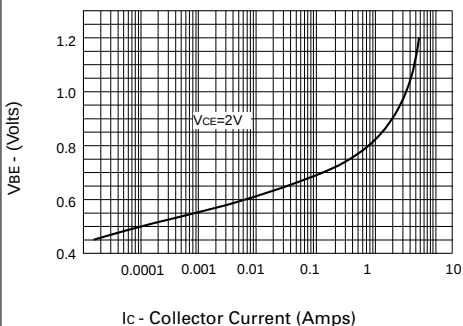
Switching Speeds



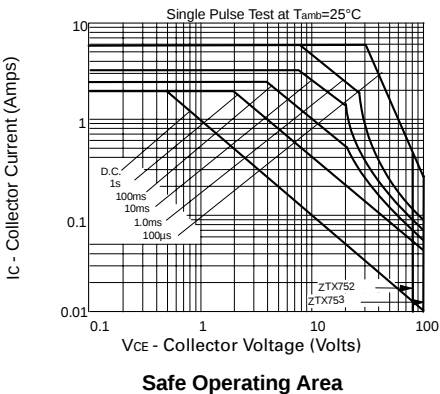
h_{FE} v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



Safe Operating Area