



**THE DATASHEET OF
ZTX753STZ**



ZTX752 ZTX753

PNP SILICON PLANAR MEDIUM POWER TRANSISTOR

ISSUE 2 – JULY 94

FEATURES

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

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

PARAMETER	SYMBOL	ZTX752		ZTX753		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	$I_C = 500\text{mA}$, $V_{CE} = 10\text{V}$ $I_{B1} = I_{B2} = 50\text{mA}$
	t_{off}	600		600		ns	
Output Capacitance	C_{obo}		30		30	pF	$V_{CE} = 10\text{V}$ $f = 1\text{MHz}$

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

ABSOLUTE MAXIMUM RATINGS

PARAMETER	ZTX752	ZTX753
Collector-Base Voltage		-100
Collector-Emitter Voltage		-80
Emitter-Base Voltage		-5
Peak Pulse Current		
Continuous Collector Current		
Power Dissipation at $T_{amb} = 25^\circ\text{C}$ derate above 25°C		
Operating and Storage Temperature Range		

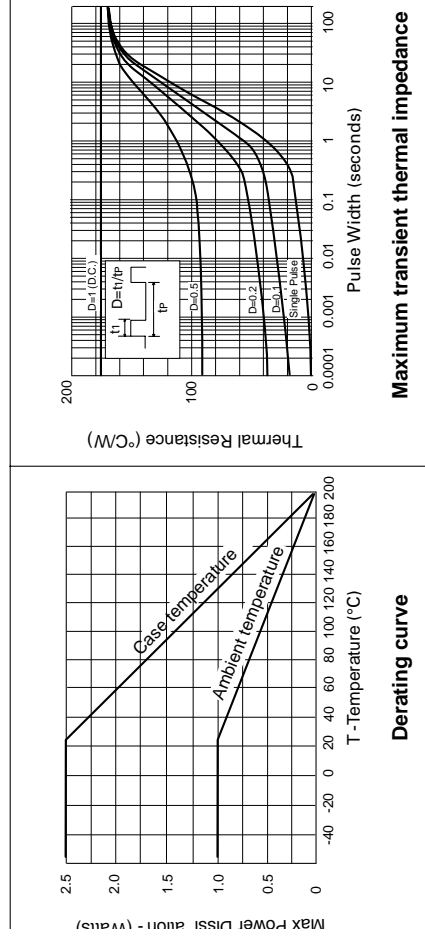
ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-100		
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-80		
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5		
Collector Cut-Off Current	I_{CBO}			
Emitter Cut-Off Current	I_{EBO}			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-0.1		
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-0.1		
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	-0.1		

THERMAL CHARACTERISTICS

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

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



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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	$I_C = 500mA, V_{CE} = 10V$ $I_{B1} = I_{B2} = 50mA$
	t_{off}	600		600		ns	
Output Capacitance	C_{obo}		30		30	pF	$V_{CE} = 10V, f = 1MHz$

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

ABSOLUTE MAXIMUM RATINGS

PARAMETER	ZTX752	ZTX753
Collector-Base Voltage		-100
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Continuous Collector Current		
Power Dissipation at $T_{amb} = 25^{\circ}C$ derate above $25^{\circ}C$		

OPERATING AND STORAGE TEMPERATURE RANGES

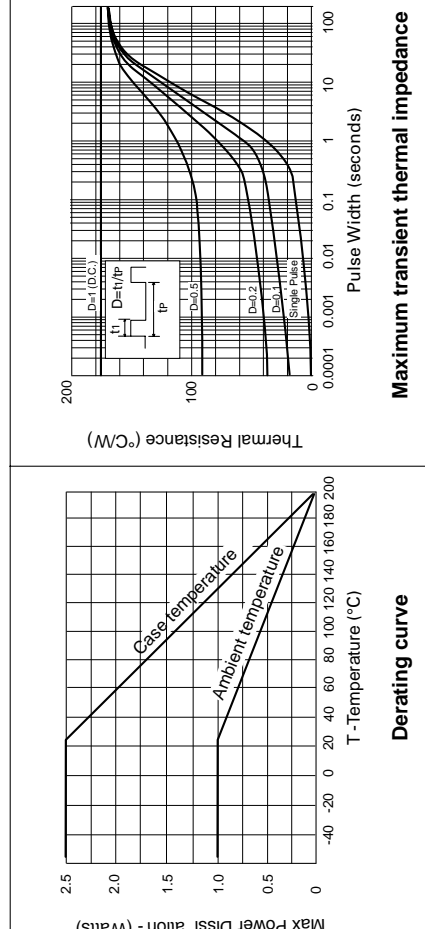
ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.
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Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-80		
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Collector Cut-Off Current	I_{CBO}			
Emitter Cut-Off Current	I_{EBO}			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-0.1		
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-0.1		
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	-0.1		

THERMAL CHARACTERISTICS

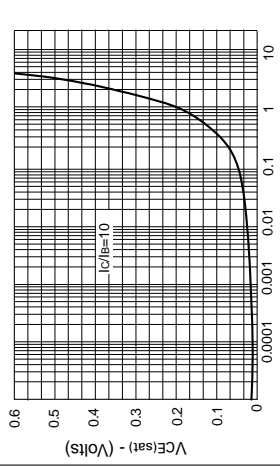
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Thermal Resistance: Junction to Ambient ₁ Junction to Ambient ₂ Junction to Case	$R_{th(j-amb)1}$	175	$^{\circ}C/W$
	$R_{th(j-amb)2}^{\dagger}$	116	$^{\circ}C/W$
	$R_{th(j-case)}$	70	$^{\circ}C/W$

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

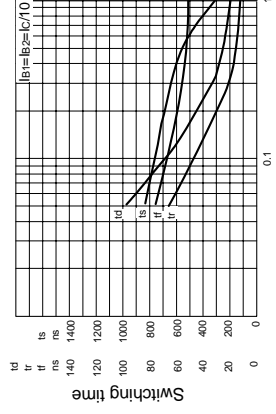


ZTX752 ZTX753

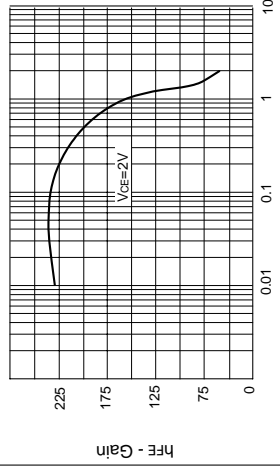
TYPICAL CHARACTERISTICS



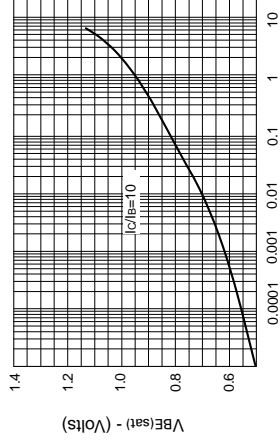
$V_{CE(sat)}$ v I_C
 $I_C/I_B=10$
 Ic - Collector Current (Amps)



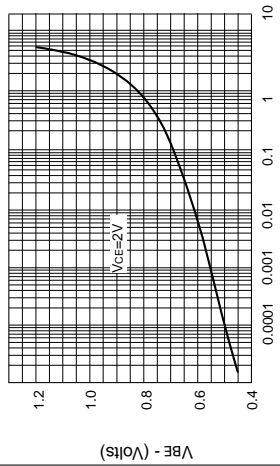
I_C - Collector Current (Amps)
Switching Speeds



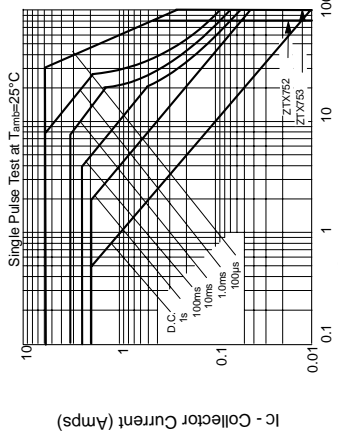
h_{FE} v I_C
 $V_{CE}=2V$
 Ic - Collector Current (Amps)



$V_{BE(sat)}$ v I_C
 $I_C/I_B=10$
 Ic - Collector Current (Amps)



V_{BE} v I_C
 $V_{CE}=2V$
 Ic - Collector Current (Amps)



Safe Operating Area
 V_{CE} - Collector Voltage (Volts)
 Ic - Collector Current (Amps)

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