

ZTX652
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NPN SILICON PLANAR
MEDIUM POWER TRANSISTORS

ISSUE 2 – JULY 94

ZTX652
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ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

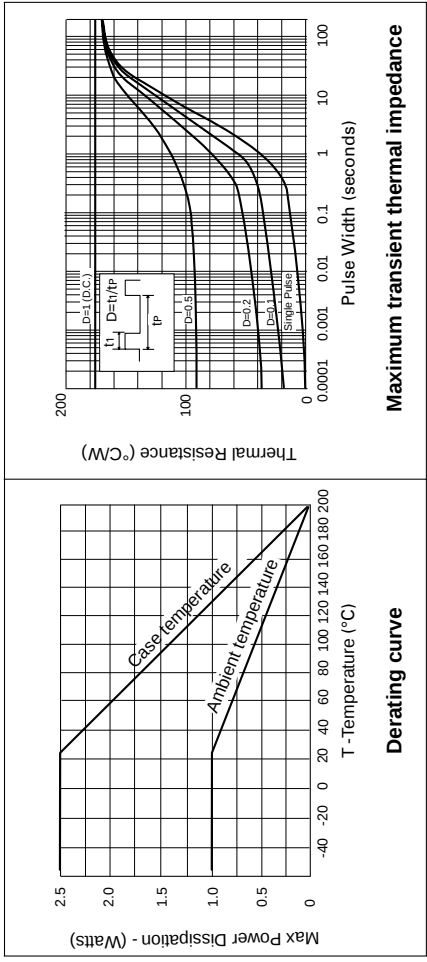
PARAMETER	SYMBOL	ZTX652		ZTX653		UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
Transition Frequency	f _T	140	175		140	175	MHz I _C =100mA, V _{CE} =5V f=100MHz
Switching Times	t _{on}		80			80	ns I _C =500mA, V _{CE} =10V I _{B1} =I _{B2} =50mA
	t _{off}		1200			1200	ns
Output Capacitance	C _{obo}			30		30	pF V _{CE} =10V f=1MHz

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

THERMAL CHARACTERISTICS

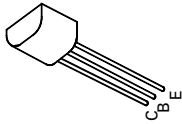
PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient ₁ Junction to Ambient ₂ Junction to Case	R _{th(j-amb)1}	175	°CW
	R _{th(j-amb)2} †	116	°CW
	R _{th(j-case)}	70	°CW

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



FEATURES

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



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	ZTX652	ZTX653	UNIT
Collector-Base Voltage	V _{CBO}	100	120	V
Collector-Emitter Voltage	V _{CEO}	80	100	V
Emitter-Base Voltage	V _{EB0}	5	5	V
Peak Pulse Current	I _{CM}	6	6	A
Continuous Collector Current	I _C	2	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

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PARAMETER	SYMBOL	ZTX652		ZTX653		UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
Collector-Base Breakdown Voltage	V _{(BR)CBO}	100			120		V I _C =100µA
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 =100µA
Collector Cut-Off Current	I _{CBO}			0.1	10	µA	V _{CB} =80V
						µA	V _{CB} =100V
						µA	V _{CB} =80V, T _{amb} =100°C
						µA	V _{CB} =100V, T _{amb} =100°C
Emitter Cut-Off Current	I _{EBO}			0.1		µA	V _{EB} =4V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	0.13 0.23		0.3 0.5	0.13 0.23	V	I _C =1A, I _B =100mA*
						V	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*

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TYPICAL CHARACTERISTICS

