

ZTX649

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

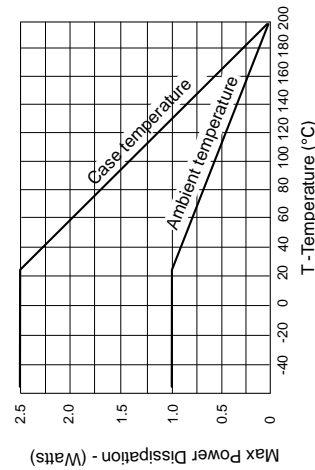
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Output Capacitance	C _{obo}		25	50	pF	V _{CB} =10V f=1MHz
Switching Times	t _{on}		55		ns	I _C =500mA, V _{CE} =10V I _{B1} =I _{B2} =50mA
	t _{off}		300		ns	

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

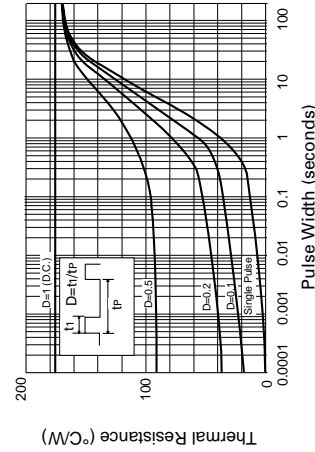
THERMAL CHARACTERISTICS

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

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



Derating curve



Maximum transient thermal impedance

**NPN SILICON PLANAR
MEDIUM POWER TRANSISTOR**

ISSUE 2 – APRIL 94

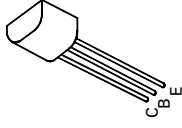
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FEATURES

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

APPLICATIONS

- * Motor driver
- * DC-DC converters



**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
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	25			V	I _C =10mA*
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5			V	I _E =100µA
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
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	I _C =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*
Transition Frequency	f _T	150	240		MHz	I _C =100mA, V _{CE} =5V f=100MHz

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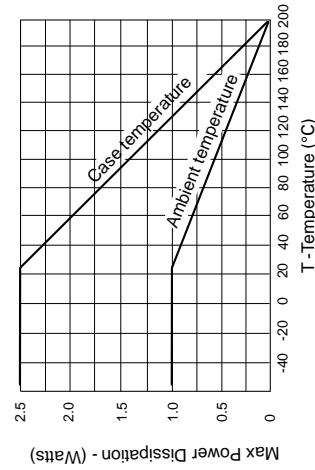
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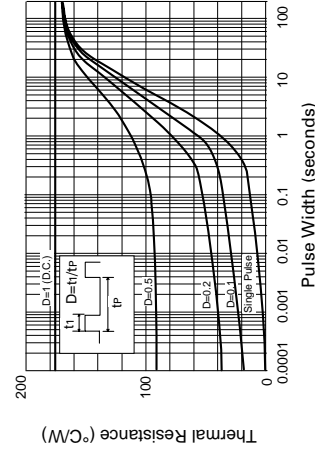
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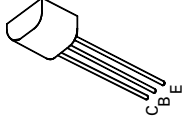
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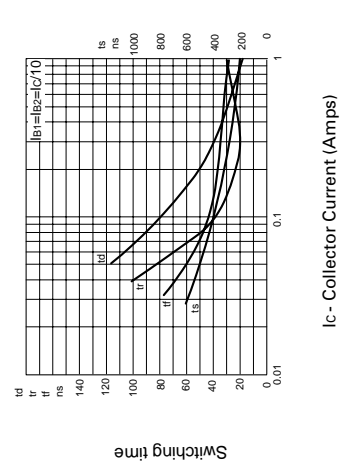
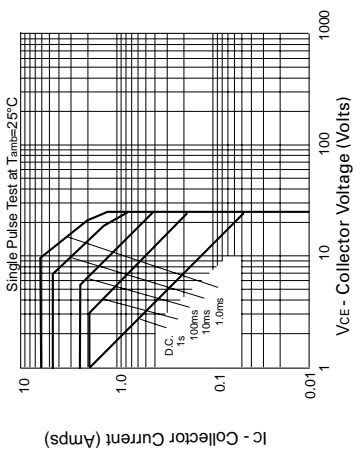
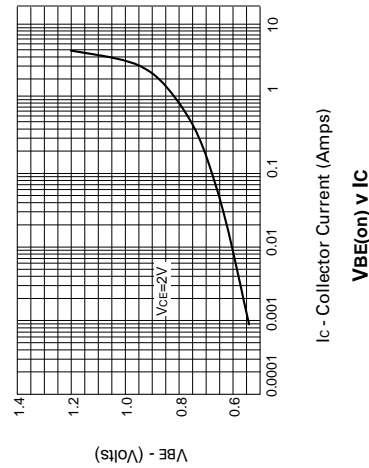
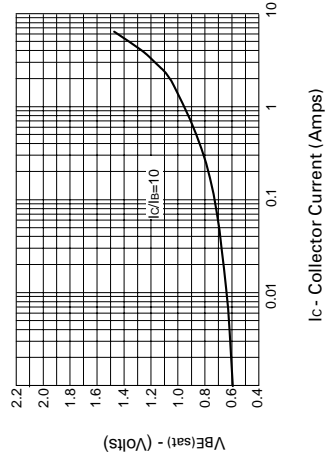
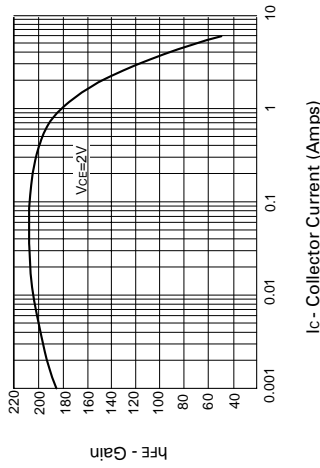
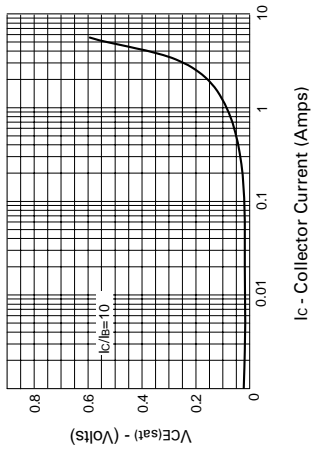
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TYPICAL CHARACTERISTICS



Safe Operating Area

Switching Speeds