

ZTX658

NPN SILICON PLANAR MEDIUM POWER
HIGH VOLTAGE TRANSISTOR

ISSUE 2 – APRIL 2002

ZTX658

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

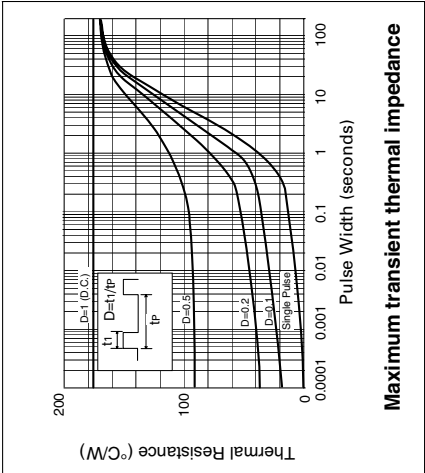
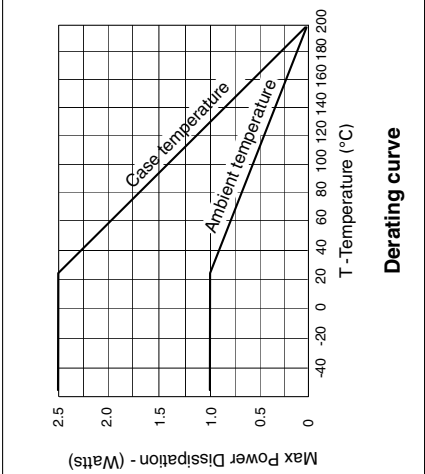
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f _T	50			MHz	I _C =20mA, V _{CE} =20V f=20MHz
Output capacitance	C _{obo}			10	pF	V _{CE} =20V, f=1MHz
Switching times	t _{on} t _{off}		130 3300		ns ns	I _C =100mA, V _{CE} =100V I _{B1} =10mA, I _{B2} =-20mA

* 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.



FEATURES

- * 400 Volt V_{CEO}
- * 0.5 Amp continuous current
- * P_{tot}=1 Watt

APPLICATIONS

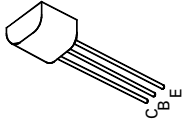
- * Telephone dialler circuits

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V _{CBO}	400	V
Collector-Emitter Voltage	V _{CEO}	400	V
Emitter-Base Voltage	V _{EBO}	5	V
Peak Pulse Current	I _{CM}	1	A
Continuous Collector Current	I _C	500	mA
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

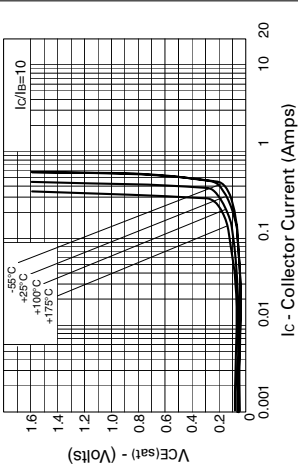
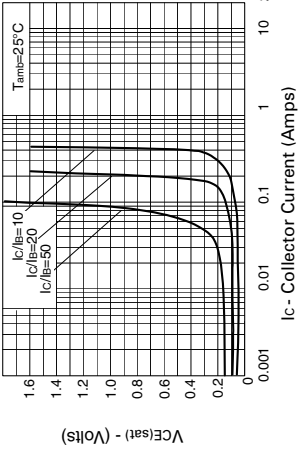
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	V _{(BR)CBO}	400			V	I _C =100µA
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	400			V	I _C =10mA*
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5			V	I _E =100µA
Collector Cut-Off Current	I _{CBO}			100	nA	V _{CB} =320V
Collector Cut-Off Current	I _{CBO}			100	nA	V _{CE} =320V
Emitter Cut-Off Current	I _{EBO}			100	nA	V _{EB} =4V
Collector-Emitter Saturation Voltage	V _{CE(sat)}			0.3 0.25 0.5	V	I _C =20mA, I _B =1mA I _C =50mA, I _B =5mA* I _C =100mA, I _B =10mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}			0.9	V	I _C =100mA, I _B =10mA*
Base-Emitter Turn On Voltage	V _{BE(on)}			0.9	V	I _C =100mA, V _{CE} =5V*
Static Forward Current Transfer Ratio	h _{FE}	50 50 40				I _C =1mA, V _{CE} =5V* I _C =100mA, V _{CE} =5V* I _C =200mA, V _{CE} =10V*



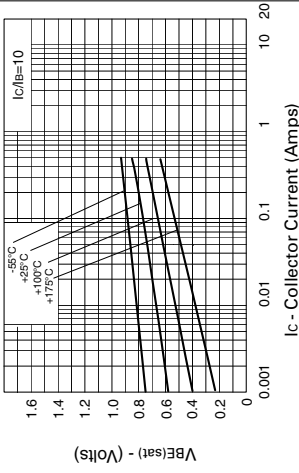
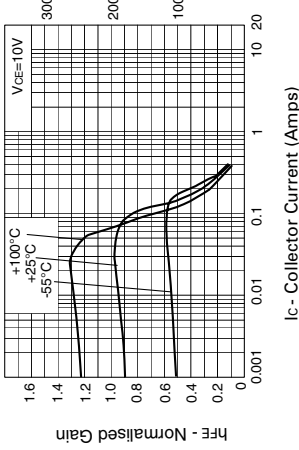
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TYPICAL CHARACTERISTICS



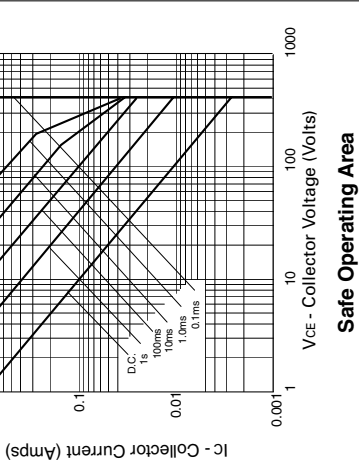
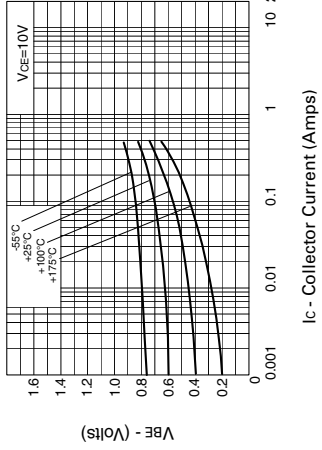
VCE(sat) v IC

VCE(sat) v IC



hFE v IC

VBE(sat) v IC



VBE(on) v IC

Safe Operating Area