



ZTX658

NPN SILICON PLANAR MEDIUM POWER HIGH VOLTAGE TRANSISTOR

ZTX658

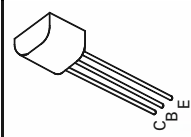
ISSUE 1 – APRIL 94

FEATURES

- * 400 Volt V_{CE0}
- * 0.5 Amp continuous current
- * $P_{tot} = 1$ Watt

APPLICATIONS

- * Telephone dialler circuits



E-Line

TO92 Compatible

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

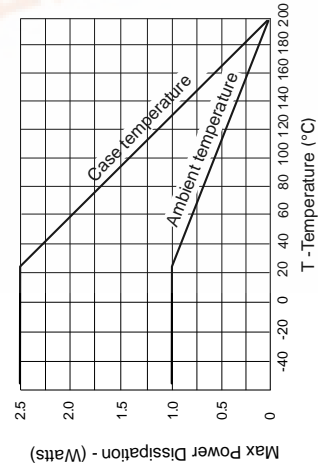
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f_T	50			MHz	$I_C = 20mA, V_{CE} = 20V, f = 20MHz$
Collector-Base Breakdown Voltage	C_{obo}		10		pF	$V_{CB} = 20V, f = 1MHz$
Switching times	t_{on} t_{off}		130 3300		ns	$I_C = 100mA, V_C = 100V, I_B = 10mA, I_B = 20mA$

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

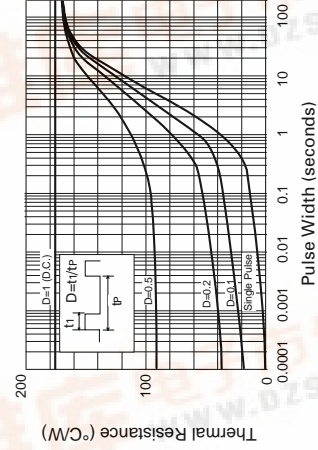
HERMAL CHARACTERISTICS

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

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



Derating curve



Maximum transient thermal impedance

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 $T_{amb} = 25^{\circ}C$	P_{tot}	1	W
derate above $25^{\circ}C$		5.7	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	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	400			V	$I_C = 100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	400			V	$I_C = 10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E = 100\mu A$
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	V	$I_C = 20mA, I_B = 1mA$
				0.25	V	$I_C = 50mA, I_B = 5mA^*$
				0.5	V	$I_C = 100mA, I_B = 10mA^*$
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				$I_C = 1mA, V_{CE} = 5V^*$
		50				$I_C = 100mA, V_{CE} = 5V^*$
		40				$I_C = 200mA, V_{CE} = 10V^*$

查询ZTX658供应商

捷多邦, 专业PCB打样工厂, 24小时加急出货

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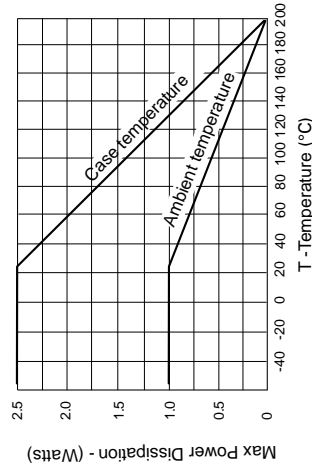
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Collector-Base Breakdown Voltage	C_{obo}		10		pF	$V_{CB} = 20\text{V}$, $f = 1\text{MHz}$
Switching times	t_{on} t_{off}		130 3300		ns ns	$I_C = 100\text{mA}$, $V_C = 100\text{V}$ $I_{B1} = 10\text{mA}$, $I_{B2} = 20\text{mA}$

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

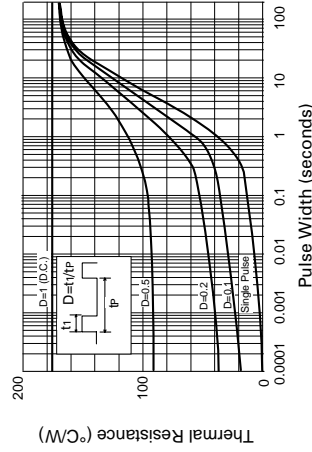
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Derating curve



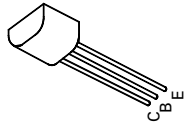
Maximum transient thermal impedance

ABSOLUTE MAXIMUM RATINGS.

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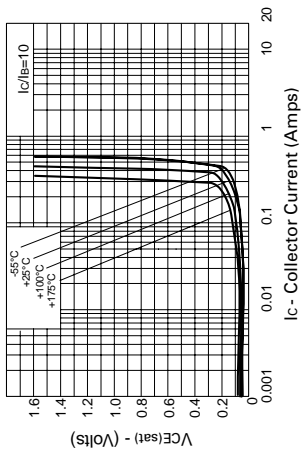
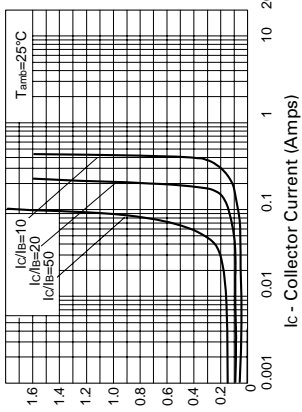
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Collector Cut-Off Current	I_{CBO}			100	nA	$V_{CB} = 320\text{V}$
Collector Cut-Off Current	I_{CBO}			100	nA	$V_{CE} = 320\text{V}$
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Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.3	V	$I_C = 20\text{mA}$, $I_B = 1\text{mA}$
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Base-Emitter Saturation Voltage	$V_{BE(sat)}$			0.9	V	$I_C = 100\text{mA}$, $I_B = 10\text{mA}^*$
Base-Emitter Turn On Voltage	$V_{BE(on)}$			0.9	V	$I_C = 100\text{mA}$, $V_{CE} = 5\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	50				$I_C = 1\text{mA}$, $V_{CE} = 5\text{V}^*$
		50				$I_C = 100\text{mA}$, $V_{CE} = 5\text{V}^*$
		40				$I_C = 200\text{mA}$, $V_{CE} = 10\text{V}^*$



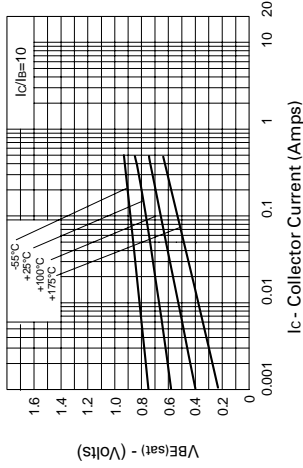
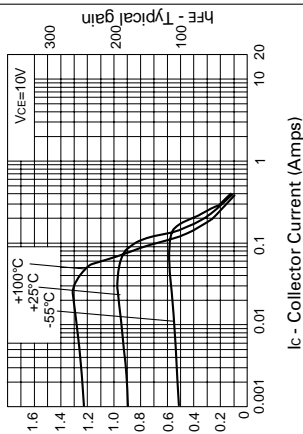
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TYPICAL CHARACTERISTICS



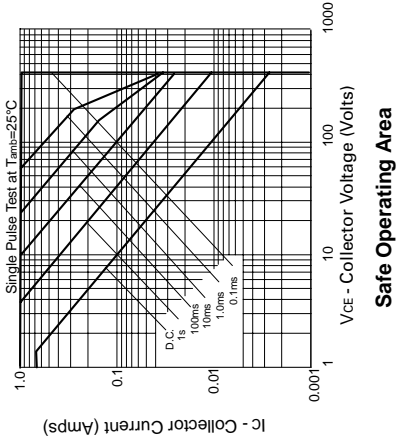
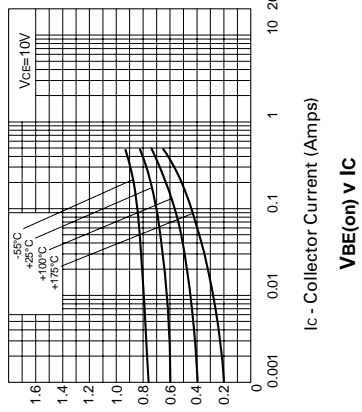
VCE(sat) v IC

VCE(sat) v IC



hFE v IC

VBE(sat) v IC



IC v VBE(on)

Safe Operating Area