

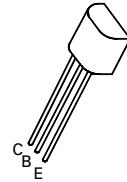
PNP SILICON PLANAR MEDIUM POWER HIGH VOLTAGE TRANSISTOR

ISSUE 1 – APRIL 94

ZTX758

FEATURES

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



E-Line
TO92 Compatible

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 $T_{amb}=25^{\circ}C$ derate above $25^{\circ}C$	P_{tot}	1 5.7	W 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	$V_{CEO(SUS)}$	-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_{CES}			-100	nA	$V_{CE} = -320V$
Emitter Cut-Off Current	I_{EBO}			-100	nA	$V_{EB} = -4V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.30 -0.25 -0.50	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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ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$)

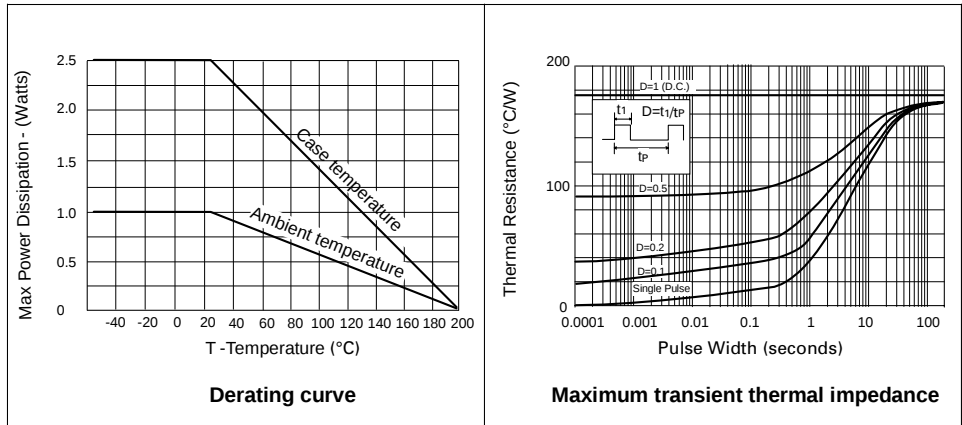
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f_T	50			MHz	$I_C = -20\text{mA}$, $V_{CE} = -20\text{V}$ $f = 20\text{MHz}$
Output Capacitance	C_{obo}			20	pF	$V_{CB} = -20\text{V}$, $f = 1\text{MHz}$
Switching times	t_{on} t_{off}		140 2000		ns ns	$I_C = -100\text{mA}$, $V_C = -100\text{V}$ $I_{B1} = 10\text{mA}$, $I_{B2} = -20\text{mA}$

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

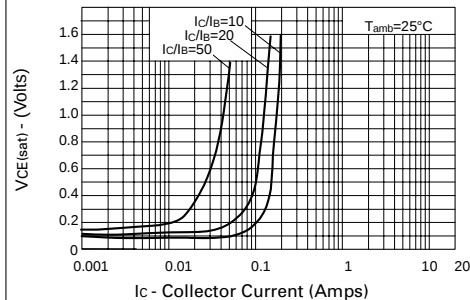
THERMAL CHARACTERISTICS

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

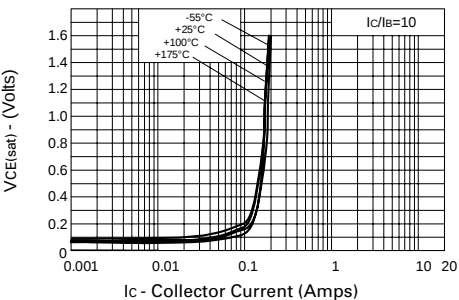
$\dagger$ Device mounted on P.C.B. with copper equal to 1 sq. Inch minimum.



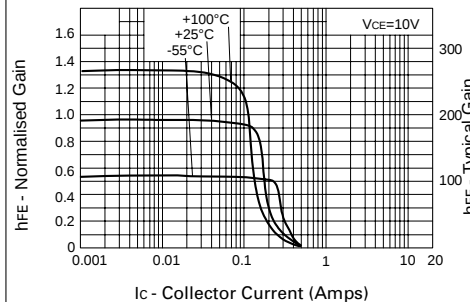
TYPICAL CHARACTERISTICS



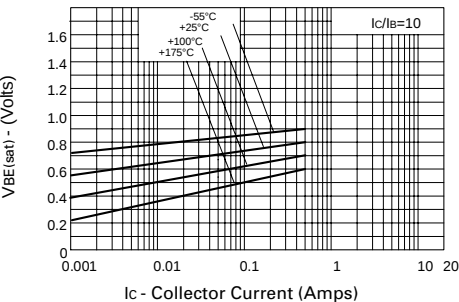
$V_{CE(sat)}$ v I_C



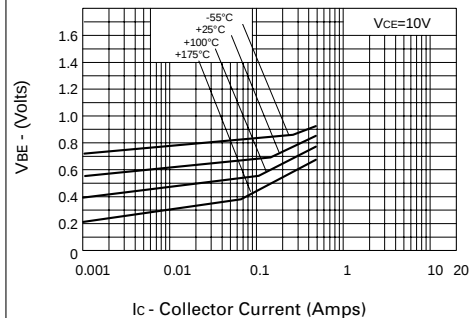
$V_{CE(sat)}$ v I_C



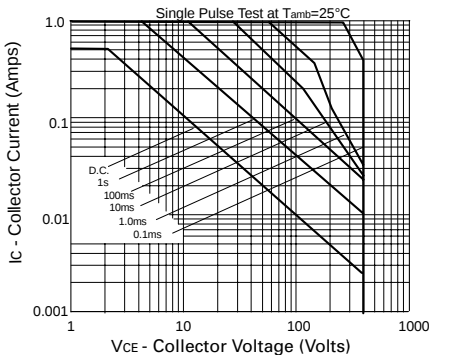
h_{FE} v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



Safe Operating Area