

ZTX957

PNP SILICON PLANAR MEDIUM POWER
HIGH CURRENT TRANSISTOR

ISSUE 3 – JUNE 94

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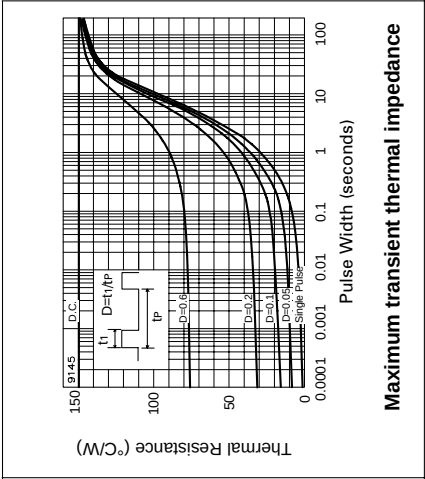
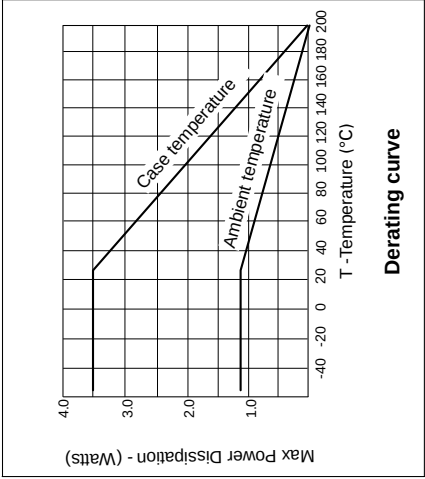
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Base-Emitter Turn-On Voltage	V _{BE(on)}		-710	-850	mV	I _C =-1A, V _{CE} =-10V*
Static Forward Current Transfer Ratio	h _{FE}	100	200	300		I _C =-10mA, V _{CE} =-10V*
		100	200			I _C =-0.5A, V _{CE} =-10V*
		90	170			I _C =-1A, V _{CE} =-10V*
			10			I _C =-2A, V _{CE} =-10V*
Transition Frequency	f _T		85		MHz	I _C =-100mA, V _{CE} =-10V f=50MHz
Output Capacitance	C _{obo}		23		pF	V _{CE} =-20V, f=1MHz
Switching Times	t _{on}		108		ns	I _C =-500mA, I _B =-50mA
	t _{off}		2500		ns	I _{B2} =-50mA, V _{CE} =-100V

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

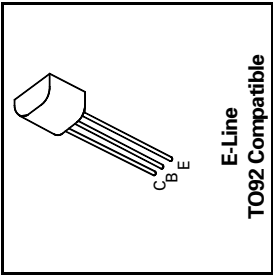
THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient Junction to Case	R _{th(j-amb)}	150	°C/W
	R _{th(j-case)}	50	°C/W



FEATURES

- * 1 Amp continuous current
- * Up to 2 Amps peak current
- * Very low saturation voltage
- * Excellent gain characteristics up to 1 Amp
- * Spice model available



ABSOLUTE MAXIMUM RATINGS.

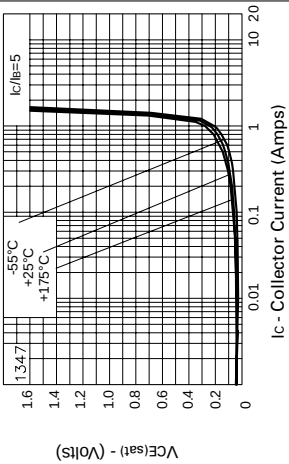
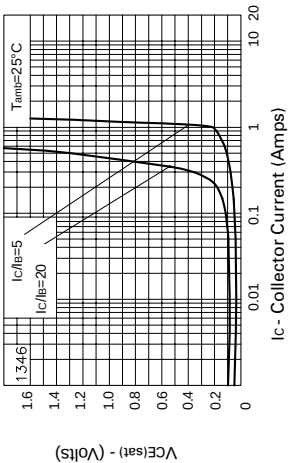
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V _{CB0}	-330	V
Collector-Emitter Voltage	V _{CE0}	-300	V
Emitter-Base Voltage	V _{EBO}	-6	V
Peak Pulse Current	I _{CM}	-2	A
Continuous Collector Current	I _C	-1	A
Practical Power Dissipation*	P _{totp}	1.58	W
Power Dissipation at T _{amb} =25°C	P _{tot}	1.2	W
Operating and Storage Temperature Range	T _J ; T _{sg}	-55 to +200	°C

*The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 1 inch square minimum

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

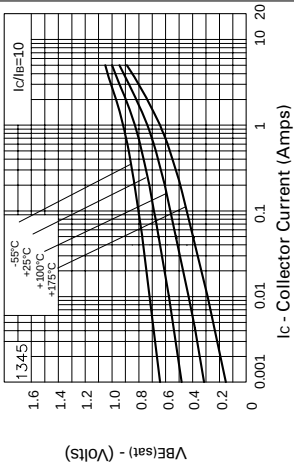
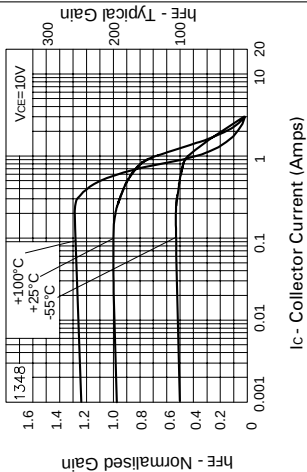
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	V _{BR(CBO)}	-330	-440		V	I _C =-100μA
Collector-Emitter Breakdown Voltage	V _{BR(CER)}	-330	-440		V	I _C =-1μA, R _B ≤1KΩ
Collector-Emitter Breakdown Voltage	V _{BR(CEO)}	-300	-400		V	I _C =-10mA*
Emitter-Base Breakdown Voltage	V _{BR(EBO)}	-6	-8		V	I _E =-100μA
Collector Cut-Off Current	I _{CBO}			-50	nA	V _{CE} =-300V V _{CB} =-300V, T _{amb} =100°C
Collector Cut-Off Current	I _{CER} R ≤1KΩ			-50	nA	V _{CE} =-300V V _{CB} =-300V, T _{amb} =100°C
Emitter Cut-Off Current	I _{EBO}			-10	nA	V _{EB} =-6V
Collector-Emitter Saturation Voltage	V _{CE(sat)}		-60	-100	mV	I _C =-100mA, I _B =-10mA*
			-100	-150	mV	I _C =-500mA, I _B =-100mA*
			-140	-200	mV	I _C =-1A, I _B =-300mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}		-870	-1000	mV	I _C =-1A, I _B =-300mA*

TYPICAL CHARACTERISTICS



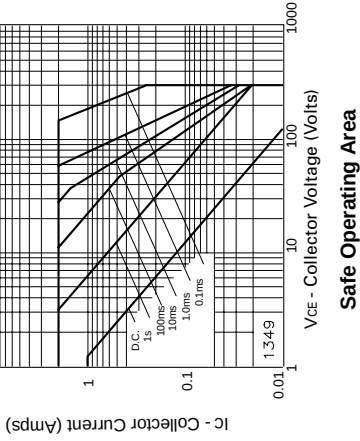
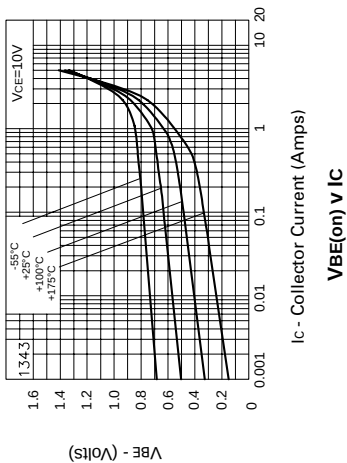
$V_{CE(sat)}$ v I_C

$V_{CE(sat)}$ v I_C



h_{FE} v I_C

$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C

Safe Operating Area