

ZTX857

NPN SILICON PLANAR MEDIUM POWER HIGH CURRENT TRANSISTOR

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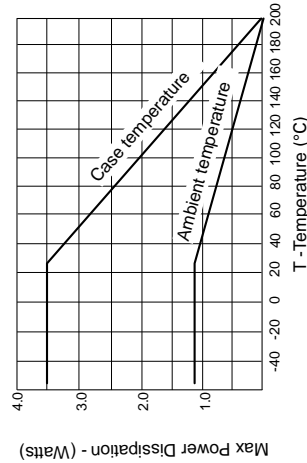
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Base-Emitter Turn-On Voltage	V _{BE(on)}		810	950	mV	I _C =2A, V _{CE} =5V*
Static Forward Current Transfer Ratio	h _{FE}	100	200	300		I _C =10mA, V _{CE} =5V
		100	200			I _C =500mA, V _{CE} =10V*
		15	25			I _C =2A, V _{CE} =10V*
Transition Frequency	f _T		80		MHz	I _C =100mA, V _{CE} =10V, f _i =100MHz
			11		pF	V _{CE} =20V, f=1MHz
Output Capacitance	C _{obo}		100		ns	I _C =250mA, I _{BT} =25mA
Switching Times	t _{on} t _{off}		5300		ns	I _{BZ} =25mA, V _{CE} =50V

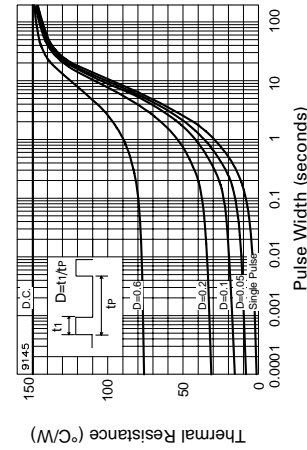
*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤2%

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



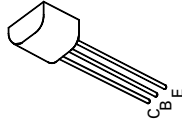
Derating curve



Maximum transient thermal impedance

FEATURES

- * 300 Volt V_{CEO}
- * 3 Amps continuous current
- * Up to 5 Amps peak current
- * Very low saturation voltage
- * P_{tot} = 1.2 Watt



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V _{CBO}	330	V
Collector-Emitter Voltage	V _{CEO}	300	V
Emitter-Base Voltage	V _{EBO}	6	V
Peak Pulse Current	I _{CM}	5	A
Continuous Collector Current	I _C	3	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 _{stg}	-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	475		V	I _C =100μA
Collector-Emitter Breakdown Voltage	V _{(BR)CER}	330	475		V	I _C =1μA, R _B ≤ 1KΩ
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	300	350		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
				1	μA	V _{CE} =300V, T _{amb} =100°C
Collector Cut-Off Current	I _{CER} R ≤ 1KΩ			50	nA	V _{CE} =300V
				1	μA	V _{CE} =300V, T _{amb} =100°C
Emitter Cut-Off Current	I _{EBO}			10	nA	V _{EB} =6V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	50	50	100	mV	I _C =0.5A, I _B =50mA*
		80	80	140	mV	I _C =1A, I _B =100mA*
		140	140	200	mV	I _C =2A, I _B =200mA*
		170	170	250	mV	I _C =3A, I _B =600mA*
		870	870	1000	mV	I _C =2A, I _B =200mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}				mV	

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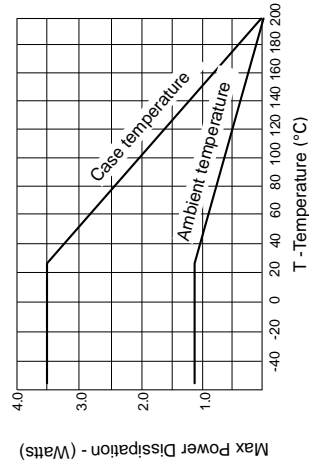
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Switching Times	t _{on} t _{off}		5300		ns	I _{BZ} =25mA, V _{CE} =50V

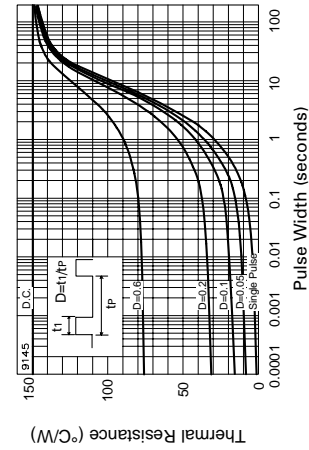
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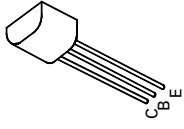
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Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	300	350		V	I _C =10mA*
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	6	8		V	I _E =100μA
Collector Cut-Off Current	I _{CBO}			50	nA	V _{CE} =300V
				1	μA	V _{CE} =300V, T _{amb} =100°C
Collector Cut-Off Current	I _{CER} R ≤ 1KΩ			50	nA	V _{CE} =300V
				1	μA	V _{CE} =300V, T _{amb} =100°C
Emitter Cut-Off Current	I _{EBO}			10	nA	V _{EB} =6V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	50	50	100	mV	I _C =0.5A, I _B =50mA*
		80	80	140	mV	I _C =1A, I _B =100mA*
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Base-Emitter Saturation Voltage	V _{BE(sat)}				mV	

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TYPICAL CHARACTERISTICS

