THE ZTX853 IS NOT RECOMMENDED FOR NEW DESIGNS.
PLEASE CONTACT US.

ZTX853

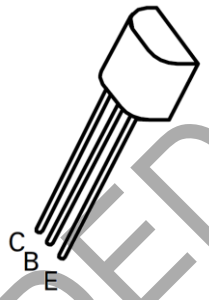
NPN SILICON PLANAR MEDIUM-POWER HIGH-CURRENT TRANSISTOR

Features

- 100 Volt V_{CEO}
- 4 Amps Continuous Current
- Up to 10 Amps Peak Current
- Very Low Saturation Voltage
- P_{tot} = 1.2 Watts
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

Pin Assignments

E-Line (TO92 Compatible)



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	200	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	6	V
Peak Pulse Current	I_{CM}	10	A
Continuous Collector Current	I_C	4	A
Practical Power Dissipation (Note 1)	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

Electrical Characteristics (@ T_{amb} = +25°C, unless otherwise stated.)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	200	300	—	V	I_C = 100µA
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	200	300	—	V	I_C = 1µA, RB ≤ 1kΩ
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	100	120	—	V	I_C = 10mA (Note 2)
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	8	—	V	I_E = 100µA
Collector Cutoff Current	I_{CBO}	— —	— —	50 1	nA µA	V_{CB} = 150V V_{CB} = 150V,T_{amb} = 100°C
Collector Cutoff Current	I_{CER} R ≤ 1kΩ	— —	— —	50 1	nA µA	V_{CB} = 150V V_{CB} = 150V,T_{amb} = 100°C
Emitter Cutoff Current	I_{EBO}	—	—	10	nA	V_{EB} = 6V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	— — —	14 100 160	50 150 200	mV	I_C = 0.1A, I_B = 5mA I_C = 2A, I_B = 100mA I_C = 4A, I_B = 400mA (Note 2)
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	960	1100	mV	I_C = 4A, I_B = 400mA (Note 2)
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	—	830	950	V	I_C = 4A, V_{CE} = 2V (Note 2)
Static Forward Current Transfer Ratio	h_{FE}	100 100 50 20	200 200 100 30	— 300 — —	—	I_C = 10mA, V_{CE} = 2V I_C = 2A, V_{CE} = 2V (Note 2) I_C = 4A, V_{CE} = 2V (Note 2) I_C = 10A, V_{CE} = 2V (Note 2)
Transition Frequency	f_T	—	130	—	MHz	I_C = 100mA, V_{CE} = 10V f = 50MHz
Output Capacitance	C_{obo}	—	35	—	pF	V_{CB} = 10V, f = 1MHz
Switching Times	t_{on} t_{off}	— —	50 1650	— —	ns	I_C = 1A, I_{B1} = 100mA I_{B2} = 100mA, V_{CC} = 10V

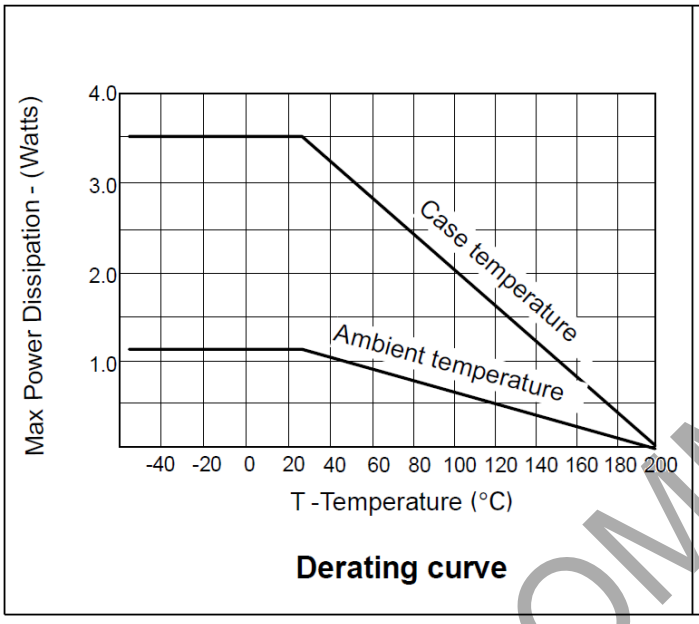
Notes: 1. The power which can be dissipated assuming the device is mounted in a typical manner on a PCB. with copper equal to 1-inch square minimum.
2. Measured under pulsed conditions. Pulse width = 300µs. Duty cycle ≤ 2%.

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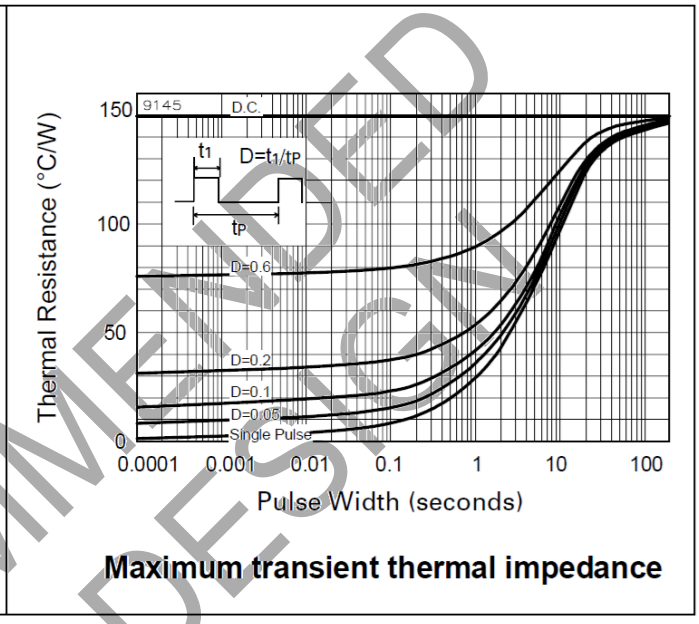
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Thermal Characteristics

Parameter		Symbol	Max	Unit
Thermal Resistance	Junction to Ambient	$R_{th(j\text{-}amb)}$	150	°C/W
	Junction to Case	$R_{th(j\text{-}case)}$	50	



Derating curve

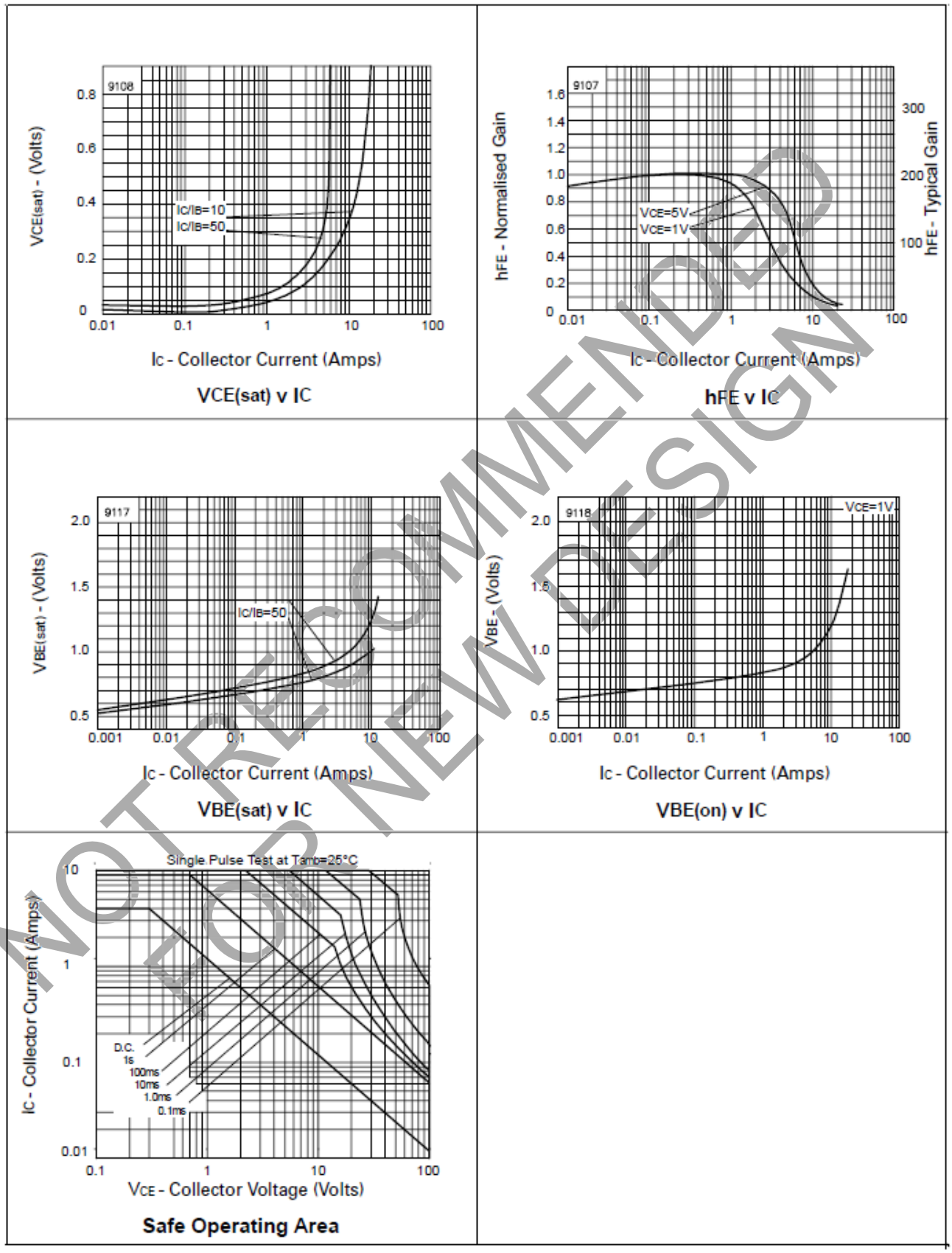


Maximum transient thermal impedance

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Typical Characteristics



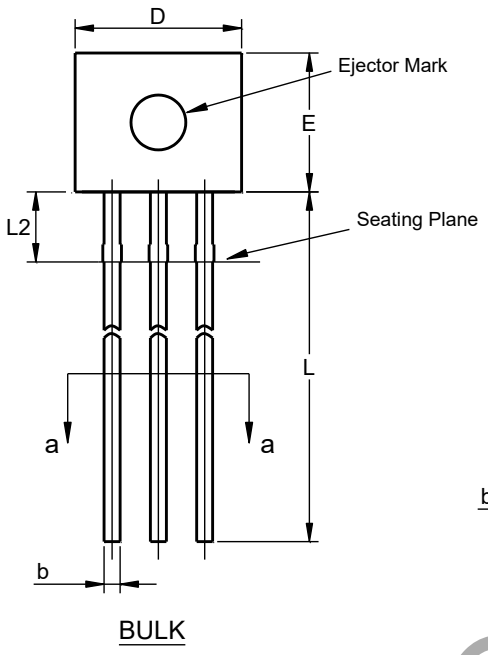
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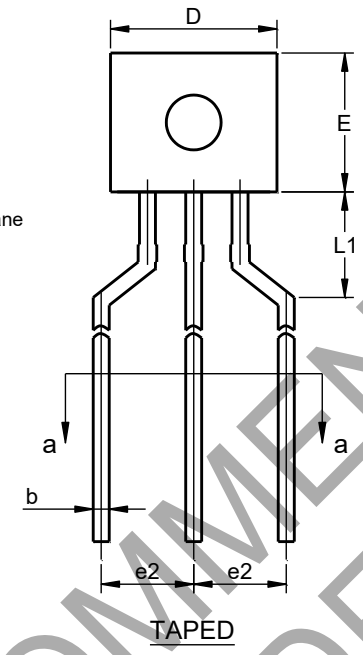
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Package Outline Dimensions

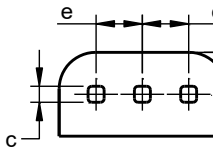
Please see http://www.diodes.com/package-outlines.html for the latest version.

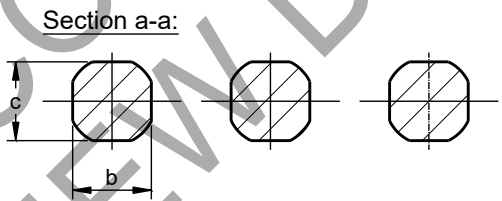
E-Line





E-Line			
Dim	**Min**	**Max**	**Typ**
A	2.16	2.41	2.28
b	0.41	0.49	0.44
c	0.41	0.49	0.44
D	4.37	4.77	4.57
E	3.61	4.01	3.90
e	1.27 REF		
e2	2.54 REF		
L	13.00	13.97	13.50
L1	2.50	3.50	--
L2	--	--	2.50
All Dimensions in mm			



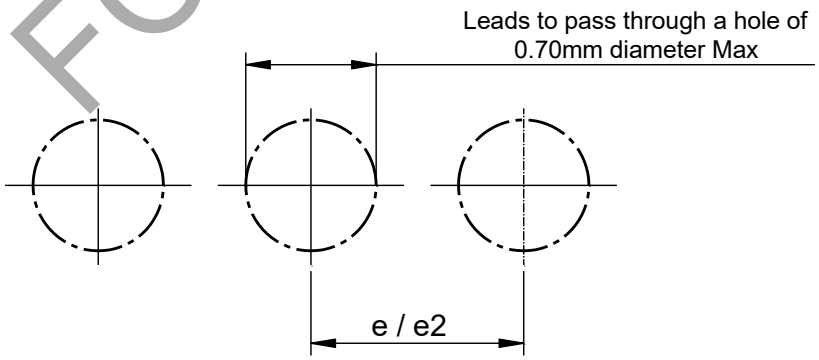


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Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

E-Line



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