THE ZTX558Q IS OBSOLETE.
PLEASE CONTACT US.

Lead-free Green

ZTX558Q

400V PNP HIGH-VOLTAGE TRANSISTOR IN E-LINE

Features

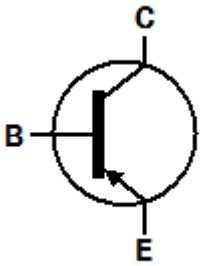
- BV_{CEO} > -400V
- I_C = -200mA Continuous Current
- P_D = 1W Power Dissipation
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The ZTX558Q is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**
  https://www.diodes.com/quality/product-definitions/

Mechanical Data

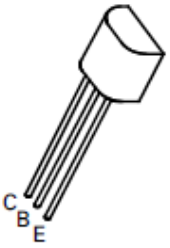
- Package: E-Line
- Package Material: Molded Plastic. "Green" Molding Compound. UL Flammability Rating 94V-0
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 159mg (Approximate)

E-Line
(TO92 Compatible)

Flat Face View



Device Symbol



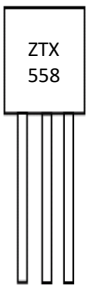
Top View
Pinout

Ordering Information (Note 4)

Orderable Part Number	Package	Marking	Leads	Packing	
				Qty.	Carrier
ZTX558Q	E-Line	ZTX558	Straight	4,000	Loose in a Box
ZTX558QSTZ	E-Line	ZTX558	Joggled	2,000	Taped per Ammo Box

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



ZTX 558 = Product Type Marking Code

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-400	V
Collector-Emitter Voltage	V_{CEO}	-400	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-200	mA

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	1.5	W
Power Dissipation (Note 6)	P_D	1	W
Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	116	°C/W
Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	175	°C/W
Thermal Resistance Junction to Lead (Note 7)	$R_{\theta JL}$	63.75	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +200	°C

ESD Ratings (Note 8)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

Notes:
5. For a through-hole device mounted at the seating plane (2.5mm lead length) with the collector lead on 25mm × 25mm 1oz weight copper that is on a single-sided FR4 PCB; device is measured under still air conditions whilst operating in a steady state.
6. Same as Note 5, except the device is mounted on minimum recommended pad layout with 12mm lead length from the bottom of package to the board.
7. Thermal resistance from junction to solder-point at the seating plane (2.5mm from the bottom of package along the collector lead).
8. Refer to JEDEC specifications JESD22-A114 and JESD22-A115.

Thermal Characteristics and Derating Information

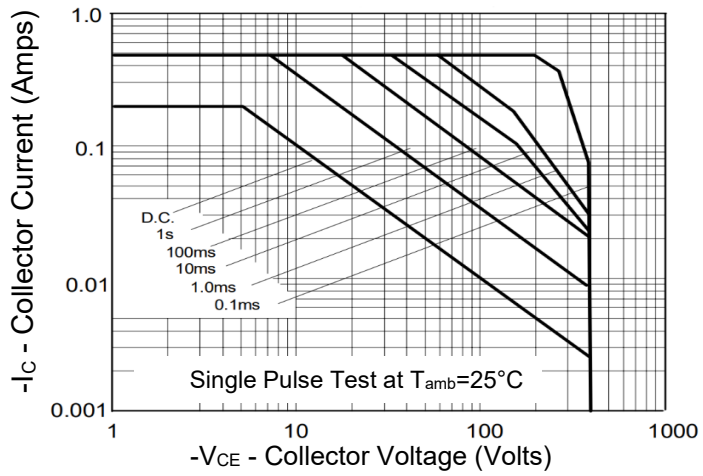


Figure 1. Safe Operating Area

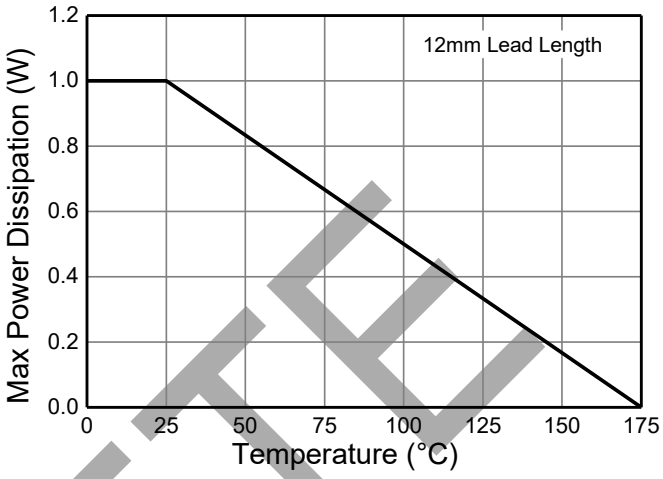


Figure 2. Derating Curve

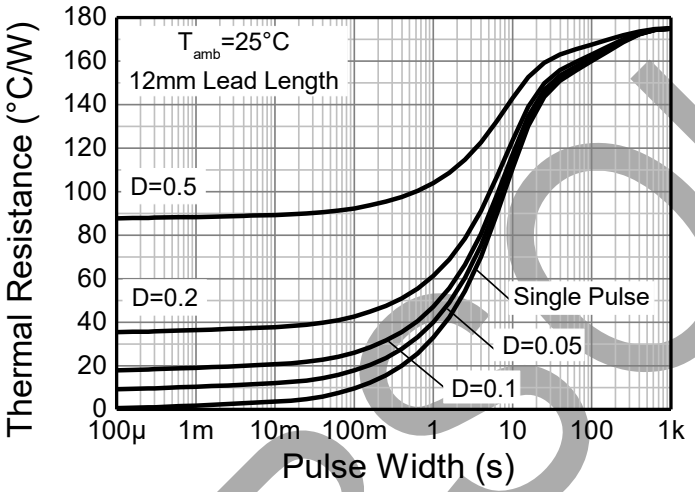


Figure 3. Transient Thermal Impedance

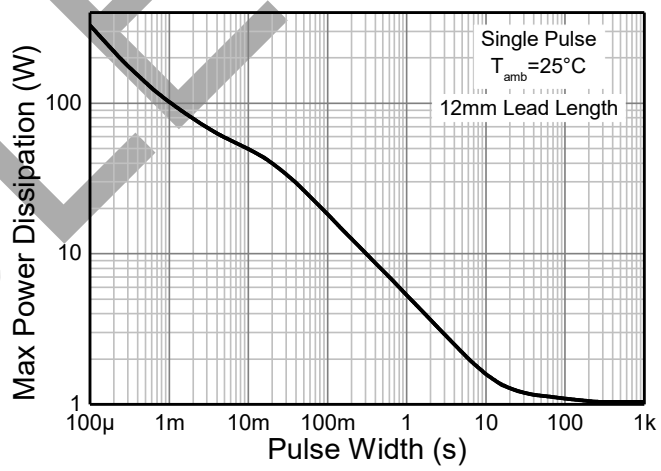


Figure 4. Pulse Power Dissipation

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-400	—	—	V	I_C = -100µA
Collector-Emitter Breakdown Voltage (Note 9)	BV_{CEO}	-400	—	—	V	I_C = -10mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	I_E = -100µA
DC Current Gain (Note 9)	h_{FE}	100 100 15	— — —	— 300 —	— — —	V_{CE} = -10V, I_C = -1mA V_{CE} = -10V, I_C = -50mA V_{CE} = -10V, I_C = -100mA
Collector-Emitter Saturation Voltage (Note 9)	$V_{CE(sat)}$	— —	— —	-0.2 -0.5	V V	I_C = -20mA, I_B = -2mA I_C = -50mA, I_B = -6mA
Base-Emitter Saturation Voltage (Note 9)	$V_{BE(sat)}$	—	—	-0.9	V	I_C = -50mA, I_B = -5mA
Base-Emitter Turn-On Voltage (Note 9)	$V_{BE(on)}$	—	—	-0.9	V	I_C = -50mA, V_{CE} = -10V
Collector-Cutoff Current	I_{CBO}	—	—	-100	nA	V_{CB} = -320V
Collector-Cutoff Current	I_{CES}	—	—	-100	nA	V_{CE} = -320V
Emitter-Cutoff Current	I_{EBO}	—	—	-100	nA	V_{EB} = -4V
Current Gain-Bandwidth Product	f_T	50	—	—	MHz	V_{CE} = -20V, I_C = -10mA f = 20MHz
Output Capacitance	C_{OBO}	—	—	5	pF	V_{CB} = -20V, f = 1MHz
Switching Time	t_{on} t_{off}	— —	95 1600	— —	ns ns	I_C = -50mA, V_C = -100V I_{B1} = 5mA, I_{B2} = -10mA

Note: 9. Measured under pulsed conditions. Pulse width ≤ 300µs. Duty cycle ≤ 2%.

Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

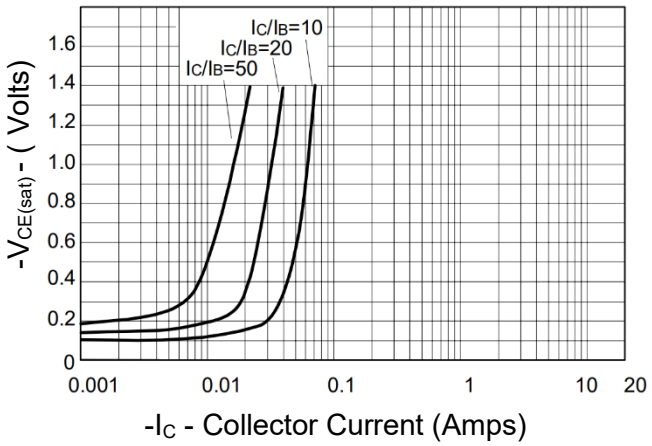


Figure 5. $V_{CE(sat)}$ vs. I_C

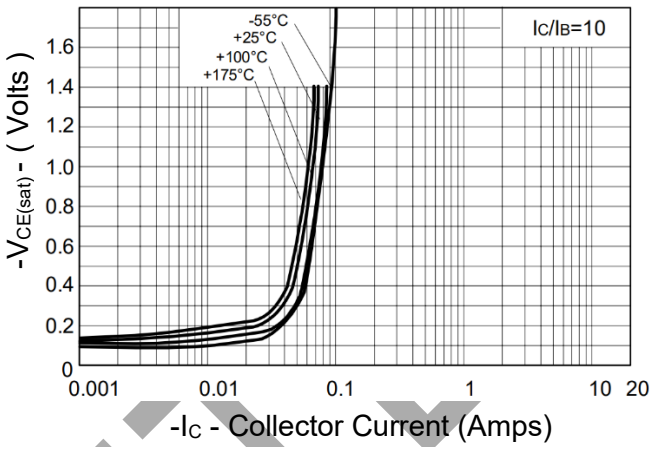


Figure 6. $V_{CE(sat)}$ vs. I_C

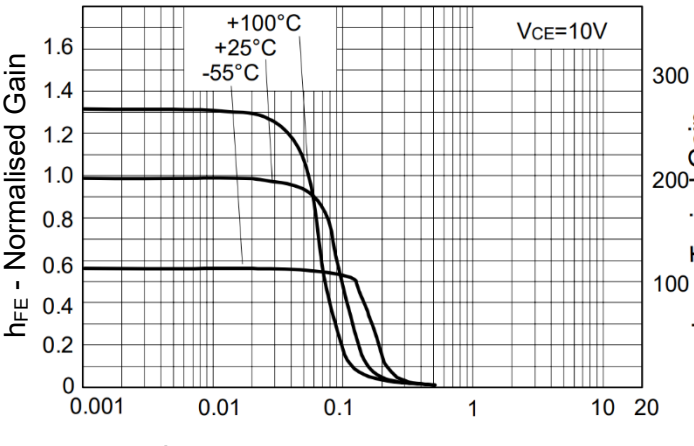


Figure. 7 h_{FE} vs. I_C

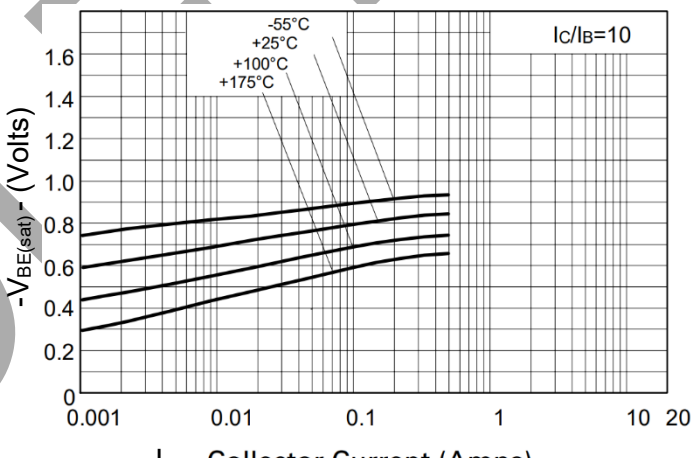


Figure 8. $V_{BE(sat)}$ vs. I_C

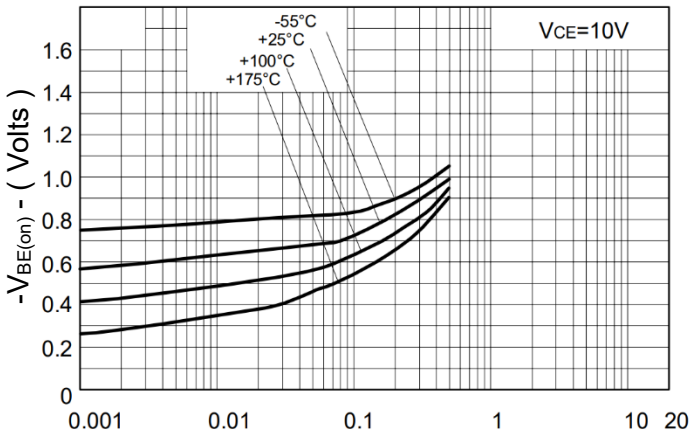
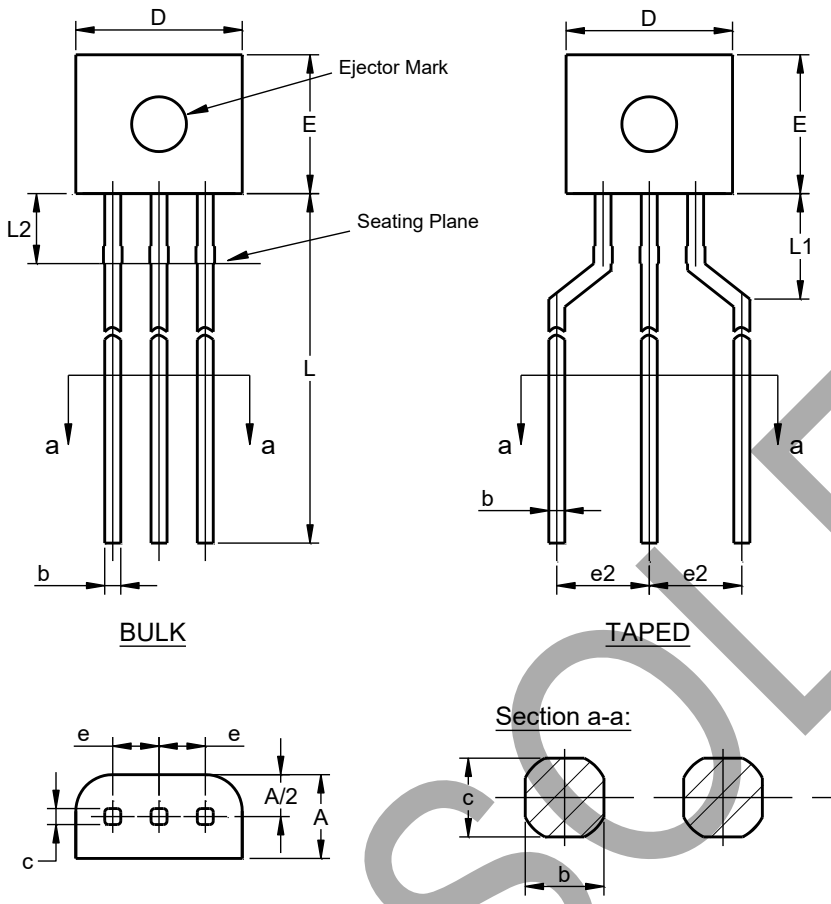


Figure 9. $V_{BE(on)}$ vs. I_C

Package Outline Dimensions

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

E-Line

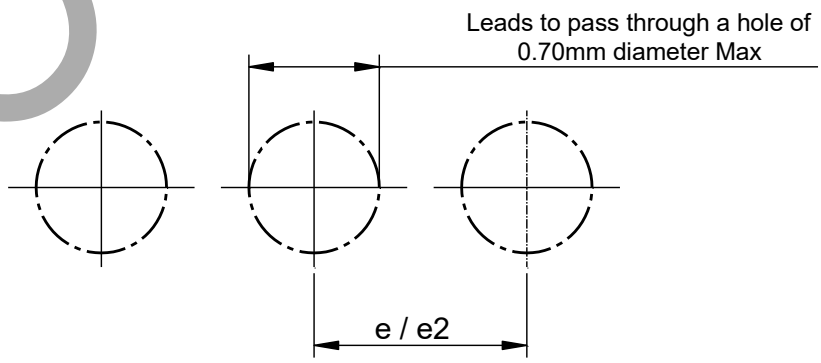


E-Line			
Dim	**Min**	**Max**	**Typ**
A	2.16	2.41	2.28
b	0.41	0.49	0.44
c	0.41	0.49	0.44
D	4.37	4.77	4.57
E	3.61	4.01	3.90
e	1.27 REF		
e2	2.54 REF		
L	13.00	13.97	13.50
L1	2.50	3.50	--
L2	--	--	2.50
All Dimensions in mm			

Suggested Pad Hole

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

E-Line



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