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PLEASE CONTACT US.

ZXTP2012A

60V PNP LOW-SATURATION MEDIUM-POWER TRANSISTOR IN E-LINE

Product Summary

BV_{CEO}	R_{SAT}	I_C
-60V	38mΩ	-3.5A

Description

Packaged in the E-line outline, this new low-saturation 60V PNP transistor offers extremely low on-state losses, making it ideal for use in DC-DC circuits and various driving and power-management functions.

Features

- 3.5 Amps Continuous Current
- Up to 15 Amps Peak Current
- Very Low Saturation Voltage
- Excellent Gain up to 10 Amps
- **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/

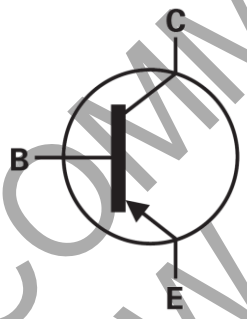
Applications

- DC-DC converters
- MOSFET gate drivers
- Power switches
- Motor control

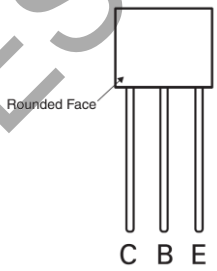
E-Line



Top View



Device Symbol



Top View - Pinout

Ordering Information

Orderable Part Number	Package	Packing	
		Qty.	Carrier
ZXTP2012ASTOA	E-Line	2,000 Units	Reel
ZXTP2012ASTZ	E-Line	2,000 Units	Carton

Device Marking

- ZXT
  P20
  12

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Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	-100	V
Collector-Emitter Voltage	BV_{CEO}	-60	V
Emitter-Base Voltage	BV_{EBO}	-7	V
Continuous Collector Current (Note 1)	I_C	-3.5	A
Peak Pulse Current	I_{CM}	-15	A
Practical Power Dissipation at T_A = 25°C (Note 1) Linear Derating Factor	P_D	1.0 8	W mW/°C
Power Dissipation at T_A = 25°C (Note 2) Linear Derating Factor	P_D	0.71 5.7	W mW/°C
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C

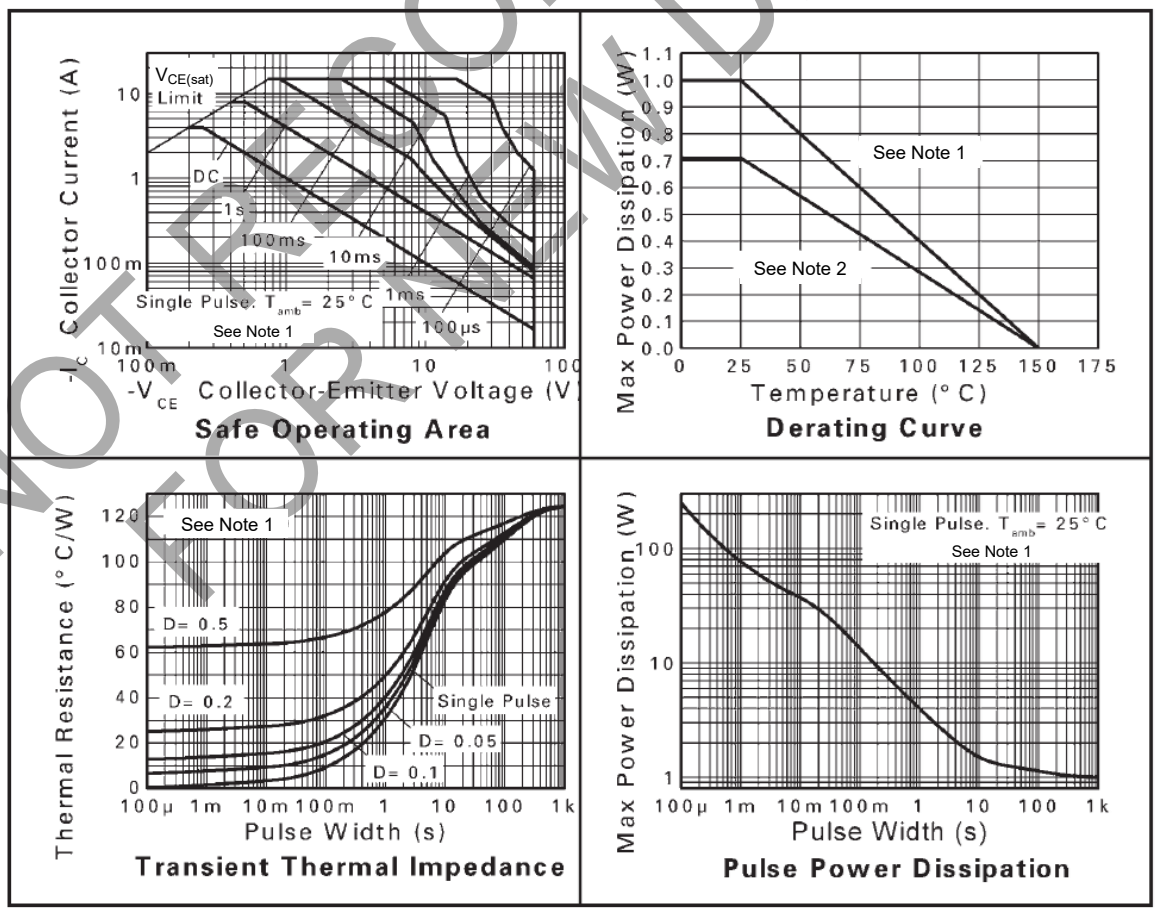
Thermal Resistance

Parameter	Symbol	Value	Unit
Junction to Ambient (Note 1)	$R_{\theta JA}$	125	°C/W
Junction to Ambient (Note 2)	$R_{\theta JA}$	175	°C/W

Notes: 1. For a device through hole mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single-sided 1oz copper, in still air conditions. Collector lead length to solder point 4mm.
2. For a device mounted in a socket in still air conditions. Collector lead length 10mm.

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Characteristics



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

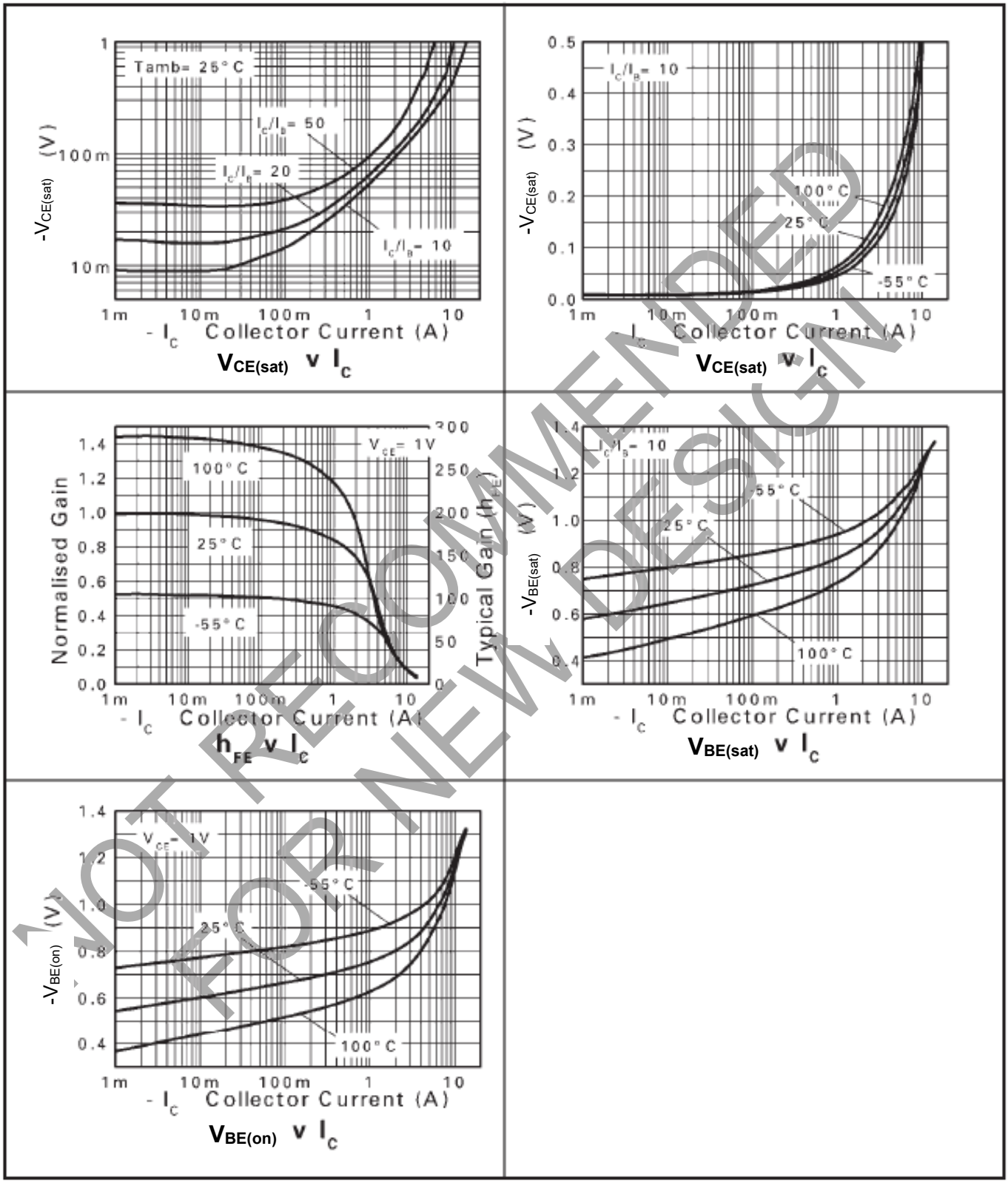
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Collector-Base Breakdown Voltage	BV_{CBO}	-100	-120	—	V	I_C = -100µA
Collector-Emitter Breakdown Voltage	BV_{CER}	-100	-120	—	V	I_C = -1µA, RB ≤ 1kΩ
Collector-Emitter Breakdown Voltage	BV_{CEO}	-60	-80	—	V	I_C = -10mA (Note 3)
Emitter-Base Breakdown Voltage	BV_{EBO}	-7	-8.1	—	V	I_E = -100µA
Collector Cutoff Current	I_{CBO}	— —	< 1 —	-20 -0.5	nA µA	V_{CB} = -80V V_{CB} = -80V, T_{amb} = 100°C
Collector Cutoff Current	I_{CER} R ≤ 1kΩ	— —	< 1 —	-20 -0.5	nA µA	V_{CB} = -80V V_{CB} = -80V, T_{amb} = 100°C
Emitter Cutoff Current	I_{EBO}	—	< 1	-10	nA	V_{EB} = -6V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	— — — —	-14 -50 -80 -145	-20 -65 -115 -210	mV	I_C = -0.1A, I_B = -10mA (Note 3) I_C = -1A, I_B = -100mA (Note 3) I_C = -2A, I_B = -200mA (Note 3) I_C = -4A, I_B = -400mA (Note 3)
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	-960	-1060	mV	I_C = -4A, I_B = -400mA (Note 3)
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	—	-850	-960	mV	I_C = -4A, V_{CE} = -1V (Note 3)
Static Forward Current Transfer Ratio	h_{FE}	100 100 65 10	250 200 120 25	— 300 — —	—	I_C = -10mA, V_{CE} = -1V (Note 3) I_C = -1A, V_{CE} = -1V (Note 3) I_C = -4A, V_{CE} = -1V (Note 3) I_C = -10A, V_{CE} = -1V (Note 3)
Transition Frequency	f_T	—	120	—	MHz	I_C = -100mA, V_{CE} = -10V f = 50MHz
Output Capacitance	C_{OBO}	—	48	—	pF	V_{CB} = -10V, f = 1MHz (Note 3)
Switching Times	t_{ON} t_{OFF}	—	39 370	— —	ns	I_C = -1A, V_{CC} = -10V, I_{B1} = I_{B2} = -100mA

Note: 3. Measured under pulsed conditions. Pulse width = 300µs. Duty cycle ≤ 2%.

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Typical Characteristics



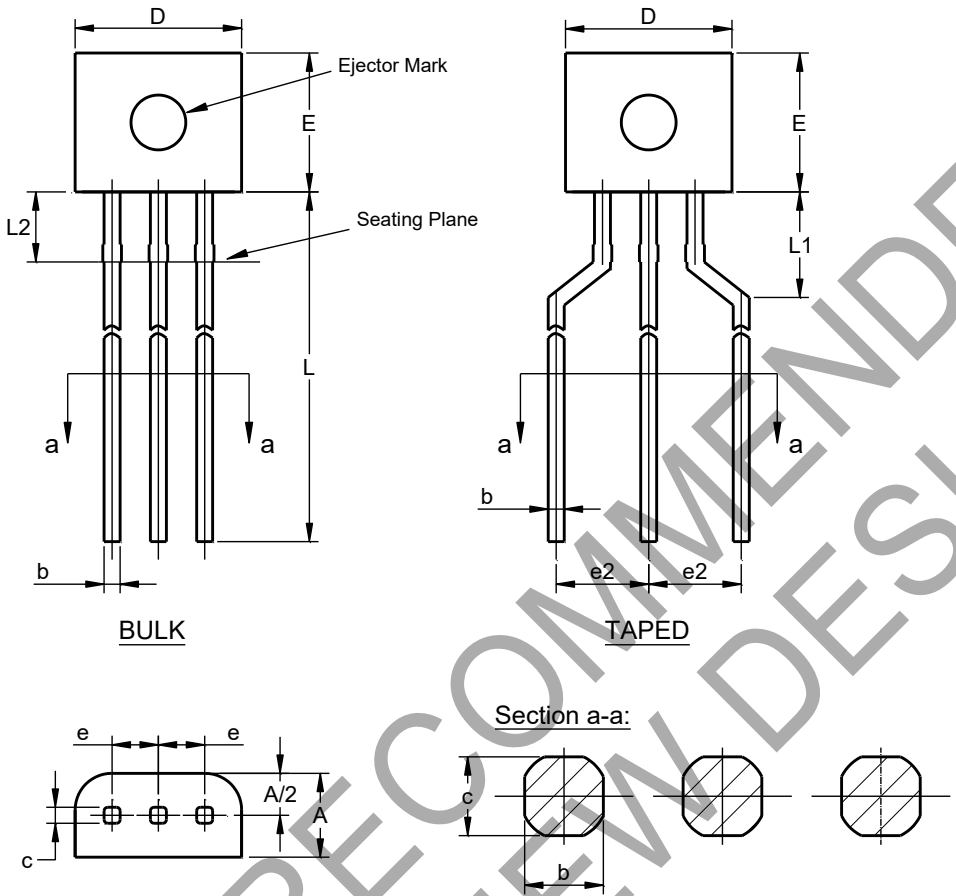
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Package Outline Dimensions

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

E-Line



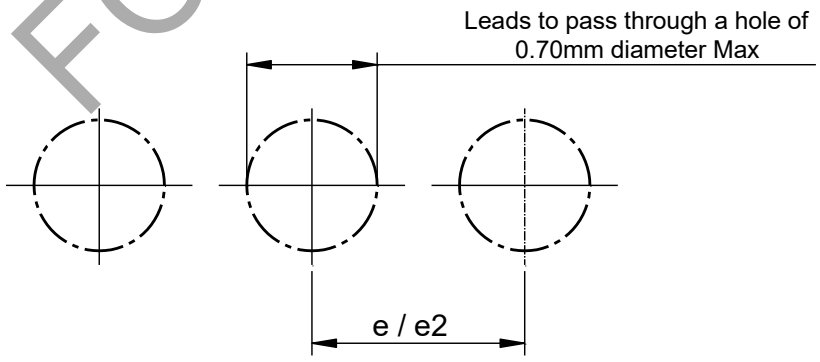
E-Line			
Dim	**Min**	**Max**	**Typ**
A	2.16	2.41	2.28
b	0.41	0.49	0.44
c	0.41	0.49	0.44
D	4.37	4.77	4.57
E	3.61	4.01	3.90
e	1.27 REF		
e2	2.54 REF		
L	13.00	13.97	13.50
L1	2.50	3.50	--
L2	--	--	2.50
All Dimensions in mm			

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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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