





ZXTP4001Z

60V PNP LED DRIVING TRANSISTOR IN SOT89

Features

- BV_{CEO} > 60V
- Max continuous current I_{C (cont)} = -1A
- h_{FE} > 100 @ I_C = -150mA, V_{CE} = -150mV
- Totally Lead-Free & Fully RoHS compliant (Note 1)
- Halogen and Antimony Free. "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

Applications

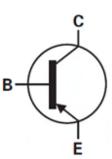
LED TV backlight

Mechanical Data

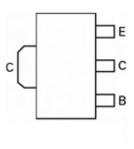
- Case: SOT89
- Case material: molded Plastic. "Green" molding Compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.052 grams (Approximate)







Device symbol



Top View Pin Out

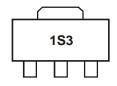
Ordering Information (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTN4001ZTA	1S3	7	12	1000 units

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 2. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 3. For packaging details, go to our website at http://www.diodes.com.

Marking Information



1S3 = Product type Marking Code



ZXTP4001Z

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V _{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-7	V
Continuous Collector Current	lc	-1	Α
Peak Pulse Current (Note 4)	I _{CM}	-3	Α
Base Current	Ι _Β	-500	mA

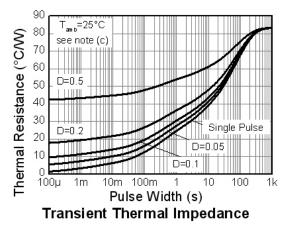
Thermal Characteristics @TA = 25°C unless otherwise specified

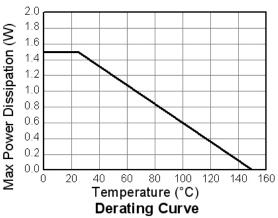
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_{D}	1.5	W
Thermal Resistance, Junction to Ambient (Note 5)	$R_{ heta JA}$	83	°C/W
Thermal Resistance, Junction to Leads (Note 6)	$R_{ heta JL}$	22.44	°C/W
Operating and Storage Temperature Range	$T_{J_1}T_{STG}$	-55 to +150	°C

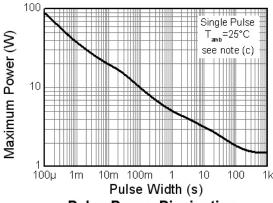
Notes:

- 4. Measured under pulsed conditions. Pulse width = 300µs. Duty cycle ≤ 2%.
- 5. For a device surface mounted on 25mm X 25mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions
- 6. Thermal resistance from junction to solder-point (at the end of the collector lead).

Thermal Characteristics and Derating information







Pulse Power Dissipation

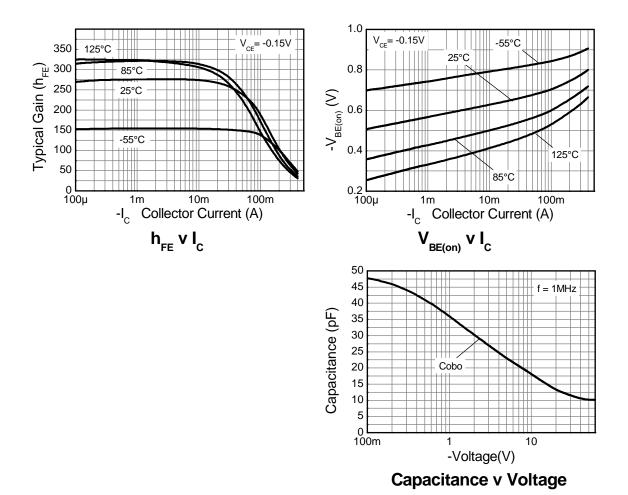


Electrical Characteristics @TA = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-60	-	-	V	$I_{C} = -100 \mu A$
Collector-Emitter Breakdown Voltage (Note 7)	BV _{CEO}	-60	-	-	V	$I_C = -10mA$
Emitter-Base Breakdown Voltage	BV _{EBO}	-7	-8.3	-	V	$I_E = -100 \mu A$
Collector Cut-off Current	I _{CBO}	-	-	-50	nA	$V_{CB} = -60V$
Emitter Cut-off Current	I _{EBO}	-	-	-50	nA	V _{EB} = -7V
Static Forward Current Transfer Ratio (Note 7)	h	60	-	-	-	$I_C = -85 \text{mA}, V_{CE} = -0.1 \text{V}$
Static Forward Current Transfer Ratio (Note 7)	h _{FE}	100	-	-	-	$I_C = -150 \text{mA}, V_{CE} = -0.15 \text{V}$
Base-Emitter Turn-On Voltage (Note 7)	$V_{BE(on)}$	-	-0.72	-0.95	٧	$I_C = -150 \text{mA}, V_{CE} = -0.15 \text{V}$
Delay Time	t _(d)	-	300	-	ns	
Rise Time	t _(r)	-	420	-	ns	$V_{CC} = -48V, I_{C} = -150mA,$
Storage Time	t _(S)	-	352	-	ns	$-I_{B2} = 1.5$ mA, $V_{CE(ON)} = -0.15$ V
Fall Time	t _(f)	-	281	-	ns	
Storage Time	t _(S)	-	48	-	ns	$V_{CC} = -48V, I_{C} = -150mA,$
Fall Time	$t_{(f)}$	-	245	-	ns	$-I_{B2} = -1.5$ mA $V_{CE(ON)} = -4$ V

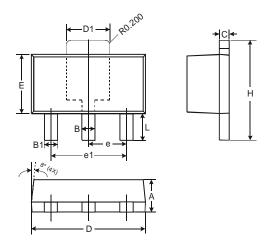
Notes: 7. Measured under pulsed conditions. Pulse width = 300μ s. Duty cycle $\leq 2\%$

Electrical Characteristics @T_A = 25°C unless otherwise specified



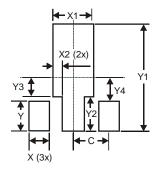


Package Outline Dimensions



SOT89				
Dim	Min	Max		
Α	1.40	1.60		
В	0.44	0.62		
B1	0.35	0.54		
С	0.35	0.43		
D	4.40	4.60		
D1	1.52	1.83		
E	2.29	2.60		
е	1.50 Typ			
e1	3.00 Typ			
Н	3.94	4.25		
L	0.89	1.20		
All Dimensions in mm				

Suggested Pad Layout



Dimensions	Value (in mm)
Х	0.900
X1	1.733
X2	0.416
Υ	1.300
Y1	4.600
Y2	1.475
Y3	0.950
Y4	1.125
С	1.500





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