

ZXTN4000Z

60V NPN LED DRIVING TRANSISTOR IN SOT89

Features

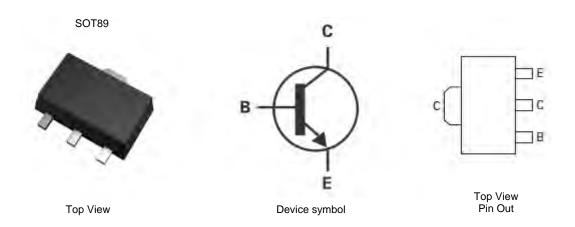
- BV_{CEO} > 60V
- Max continuous current I_C = 1A
- h_{FE} > 100 @ I_C = 150mA, V_{CE} = 150mV
- Lead Free, RoHS Compliant (Note 1)
- Halogen and Antimony Free "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

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)

Applications

LED TV backlight



Ordering Information (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTN4000ZTA	1S7	7	12	1000 units

Notes:

- 1. No purposefully added lead.
- 2. Diodes Inc's "Green" Policy can be found on our website at http://www.diodes.com
- 3. For Packaging Details, go to our website at http://www.diodes.com.

Marking Information





ZXTN4000Z

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	I _B	500	mA

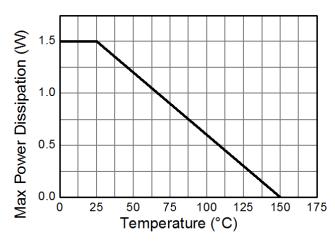
Thermal Characteristics @TA = 25°C unless otherwise specified

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 _{θJL}	28	°C/W
Operating and Storage Temperature Range	T _{J.} T _{STG}	-55 to +150	°C

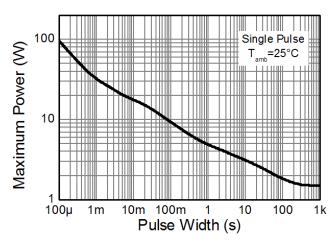
Notes:

- 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).

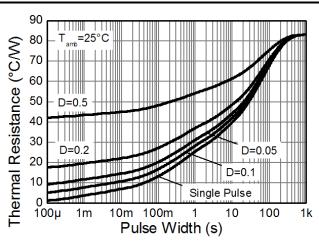
Thermal Characteristics and Derating information



Derating Curve



Pulse Power Dissipation



Transient Thermal Impedance

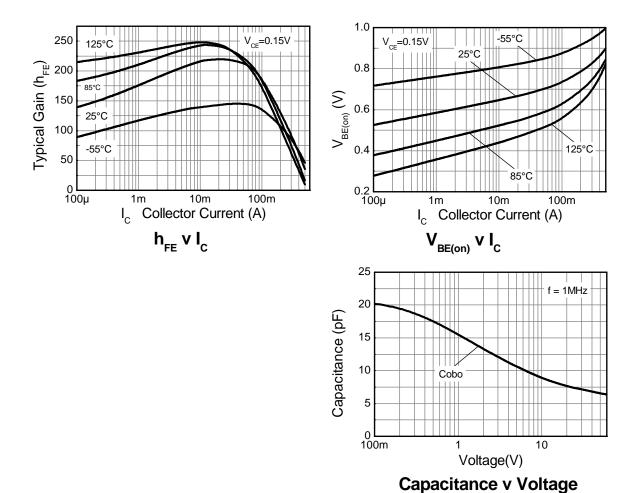


Electrical Characteristics @TA = 25°C unless otherwise specified

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 _{FE}	60	-	-	-	$I_C = 85 \text{mA}, V_{CE} = 0.1 \text{V}$
Statie i of ward outfork Transfer (Natio (Note 1)		100	-	-		$I_C = 150 \text{mA}, V_{CE} = 0.15 \text{V}$
Base-Emitter Turn-On Voltage (Note 7)	$V_{BE(on)}$	-	0.76	0.95	V	$I_C = 150 \text{mA}, V_{CE} = 0.15 \text{V}$
Delay Time	t _(d)	-	300	-	ns	
Rise Time	t _(r)	-	292	-	ns	$V_{CC} = 48V, I_{C} = 150mA,$
Storage Time	t _(S)	-	805	-	ns	$-I_{B2} = 1.5 \text{mA}, V_{CE(ON)} = 0.15 \text{V}$
Fall Time	t _(f)	-	226	-	ns	
Storage Time	t _(S)	-	25	-	ns	V _{CC} = 48V, I _C = 150mA,
Fall Time	t _(f)	-	202	-	ns	$-I_{B2} = 1.5 \text{mA}, V_{CE(ON)} = 4 \text{V}$

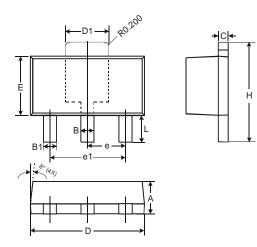
Notes: 7. Measured under pulsed conditions. Pulse width = 300µs. Duty cycle ≤ 2%

Electrical Characteristics @TA = 25°C unless otherwise specified



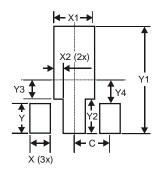


Package Outline Dimensions



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		
Е	2.29	2.60		
е	1.50 Typ			
e1	3.00 Typ			
Η	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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