

ZXTP4003G

100V PNP LED DRIVING TRANSISTOR IN SOT223

Features

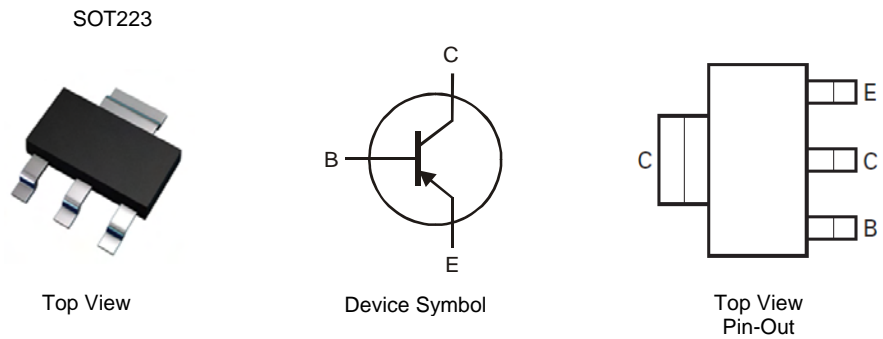
- $BV_{CEO} > -100V$
- Maximum continuous current $I_C = -1A$
- $h_{FE} > 100 @ I_C = -150mA, V_{CE} = -0.2V$
- **Lead Free, RoHS Compliant (Note 1)**
- **Halogen and Antimony Free "Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Applications

- LED TV backlight

Mechanical Data

- Case: SOT223
- 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: 0.112 grams (Approximate)

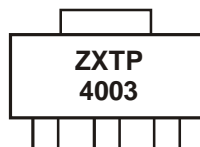


Ordering Information

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTP4003GTA	ZXTP4003	7	12	1,000

Notes: 1. No purposefully added lead.
2. "Green" devices, Halogen and Antimony Free, Diodes Inc's "Green" Policy can be found on our website at <http://www.diodes.com>

Marking Information



ZXTP4003 = Product type Marking Code

Maximum Ratings @T_A = 25°C unless otherwise specified

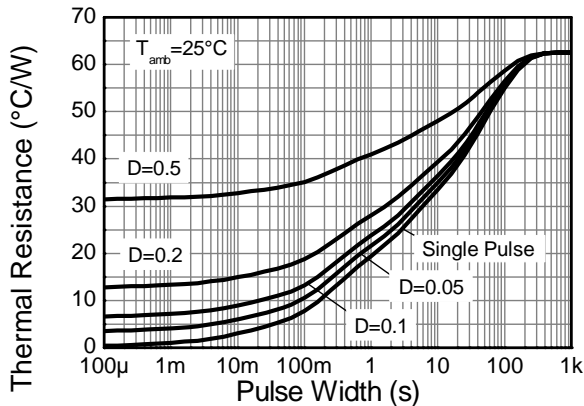
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-100	V
Collector-Emitter Voltage	V _{CEO}	-100	V
Emitter-Base Voltage	V _{EBO}	-7	V
Continuous Collector Current	I _C	-1	A
Peak Pulse Current (Note 4)	I _{CM}	-3	A
Base Current	I _B	-500	mA

Thermal Characteristics @T_A = 25°C unless otherwise specified

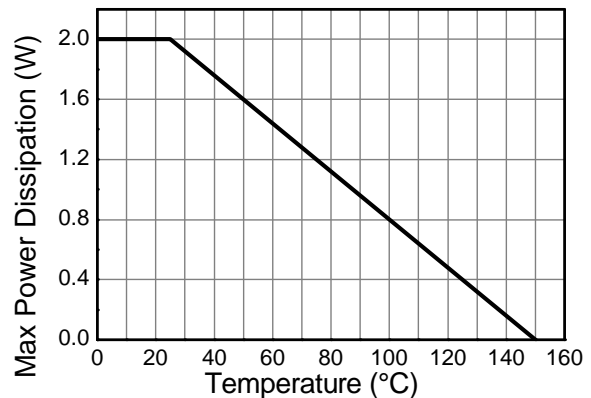
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3)	P _D	2	W
Thermal Resistance, Junction to Ambient (Note 3)	R _{θJA}	62.5	°C/W
Thermal Resistance, Junction to Leads (Note 5)	R _{θJL}	28.75	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

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

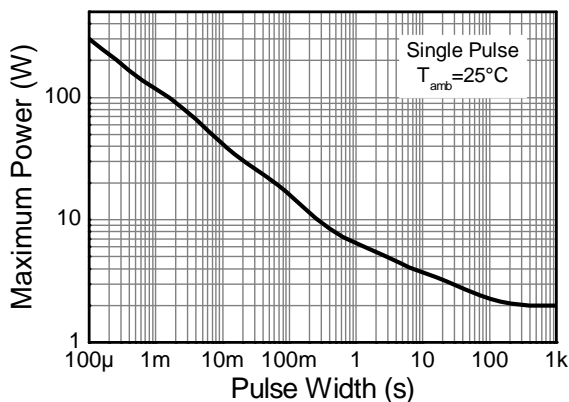
Thermal Characteristics and Derating Information



Transient Thermal Impedance



Derating Curve



Pulse Power Dissipation

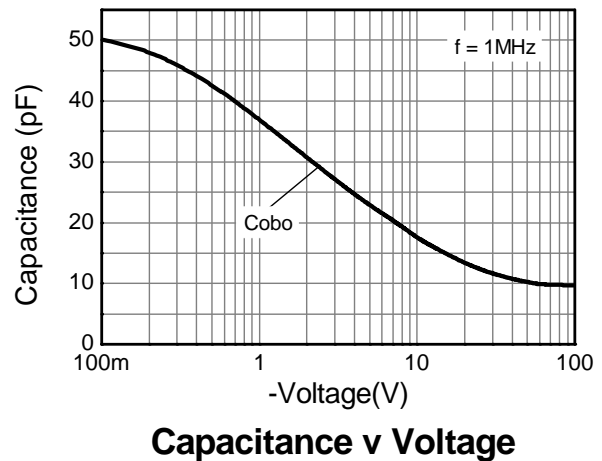
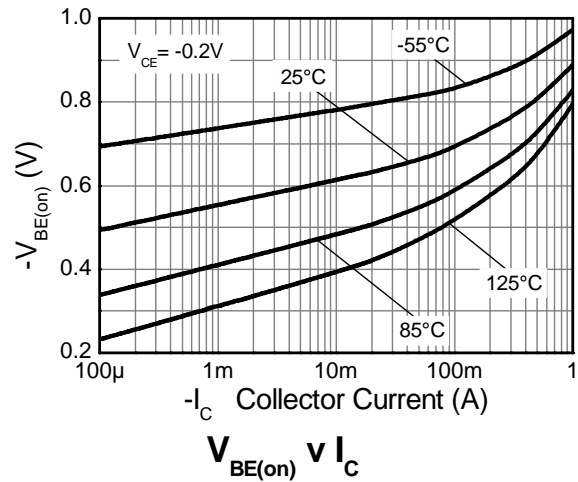
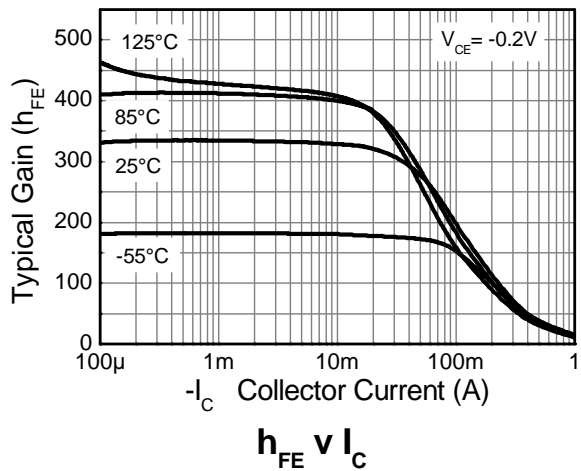
ZXTP4003G

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

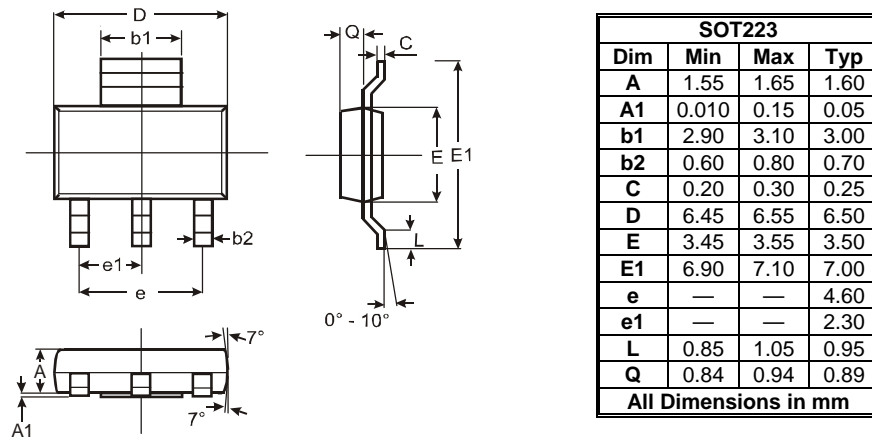
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Emitter Breakdown Voltage (Note 6)	BV_{CEO}	-100	-170	-	V	$I_C = -10\text{mA}$
Collector Cut-off Current	I_{CBO}	-	-	-50	nA	$V_{CB} = -100\text{V}$
Emitter Cut-off Current	I_{EBO}	-	-	-50	nA	$V_{EB} = -7\text{V}$
Static Forward Current Transfer Ratio (Note 6)	h_{FE}	60 100	133 112	- -	-	$I_C = -85\text{mA}, V_{CE} = -0.15\text{V}$ $I_C = -150\text{mA}, V_{CE} = -0.2\text{V}$
Base-Emitter Turn-On Voltage (Note 6)	$V_{BE(on)}$	-	-0.71	-0.95	V	$I_C = -150\text{mA}, V_{CE} = -0.2\text{V}$
Delay Time	t_d	-	378	-	ns	$V_{CC} = -80\text{V}, I_C = -150\text{mA},$ $-I_{B2} = 1.5\text{mA}, V_{CE(ON)} = -0.2\text{V}$
Rise Time	t_r	-	388	-	ns	
Storage Time	t_s	-	1348	-	ns	
Fall Time	t_f	-	382	-	ns	
Storage Time	t_s	-	75	-	ns	
Fall Time	t_f	-	363	-	ns	$V_{CC} = -80\text{V}, I_C = -150\text{mA},$ $-I_{B2} = 1.5\text{mA}, V_{CE(ON)} = -4\text{V}$

Notes: 6. Measured under pulsed conditions. Pulse width = 300 μs . Duty cycle $\leq 2\%$

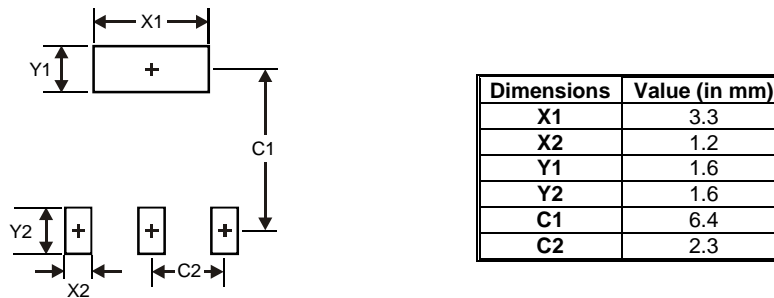
Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified



Package Outline Dimensions



Suggested Pad Layout



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Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru