

**ZXTP4003G**

**100V PNP LED DRIVING TRANSISTOR IN SOT223**

**Features**

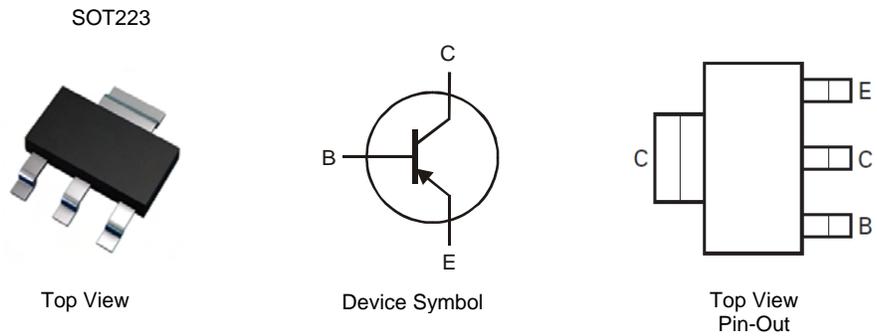
- $BV_{CEO} > -100V$
- Maximum continuous current  $I_C = -1A$
- $h_{FE} > 100 @ I_C = -150mA, V_{CE} = -0.2V$
- **Lead Free, RoHS Compliant (Note 1)**
- **Halogen and Antimony Free "Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**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)

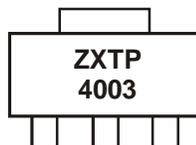


**Ordering Information**

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<sub>A</sub> = 25°C unless otherwise specified

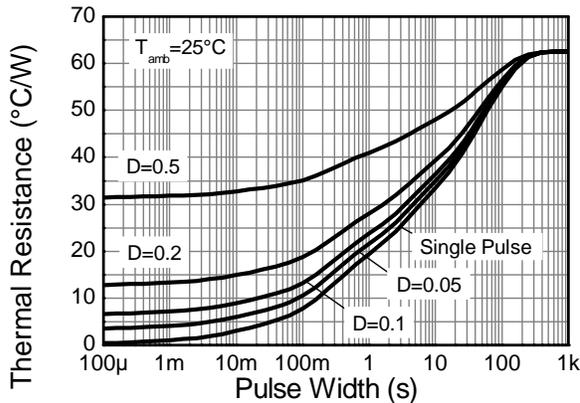
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	-100	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-100	V
Emitter-Base Voltage	V <sub>EBO</sub>	-7	V
Continuous Collector Current	I <sub>C</sub>	-1	A
Peak Pulse Current (Note 4)	I <sub>CM</sub>	-3	A
Base Current	I <sub>B</sub>	-500	mA

**Thermal Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

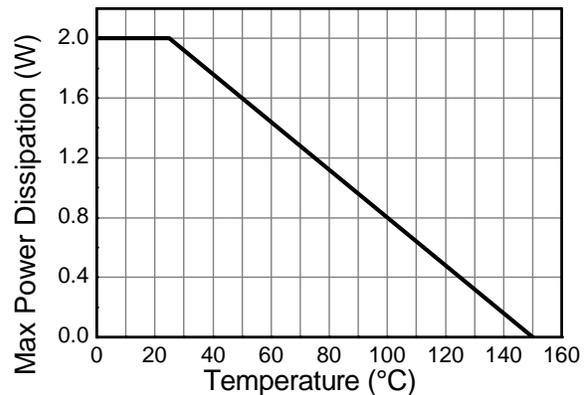
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3)	P <sub>D</sub>	2	W
Thermal Resistance, Junction to Ambient (Note 3)	R <sub>θJA</sub>	62.5	°C/W
Thermal Resistance, Junction to Leads (Note 5)	R <sub>θJL</sub>	28.75	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-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).

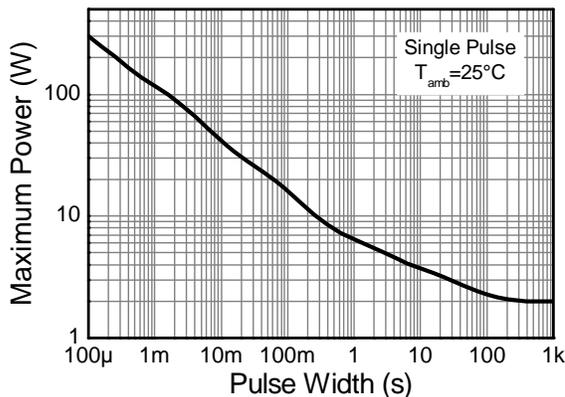
**Thermal Characteristics and Derating Information**



**Transient Thermal Impedance**



**Derating Curve**



**Pulse Power Dissipation**

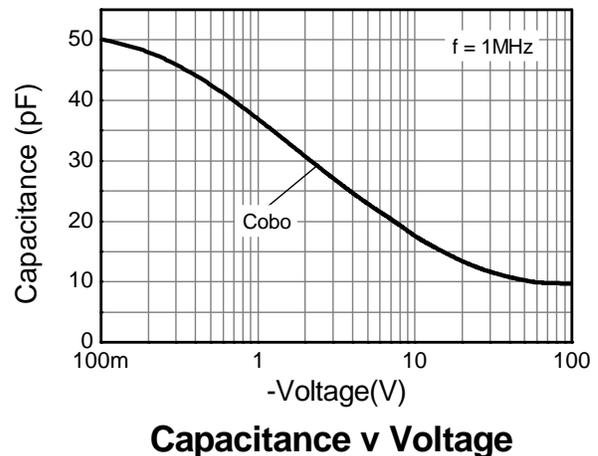
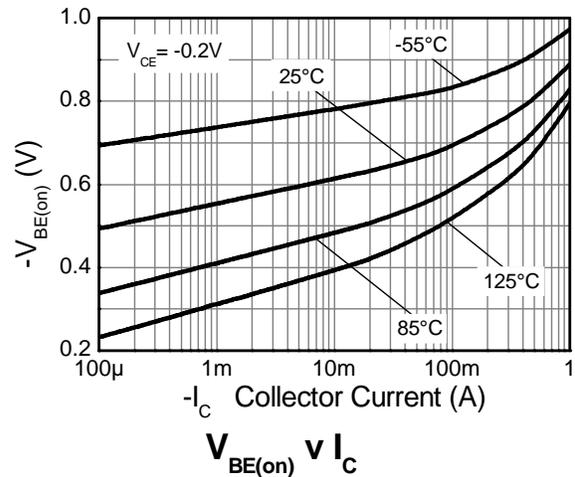
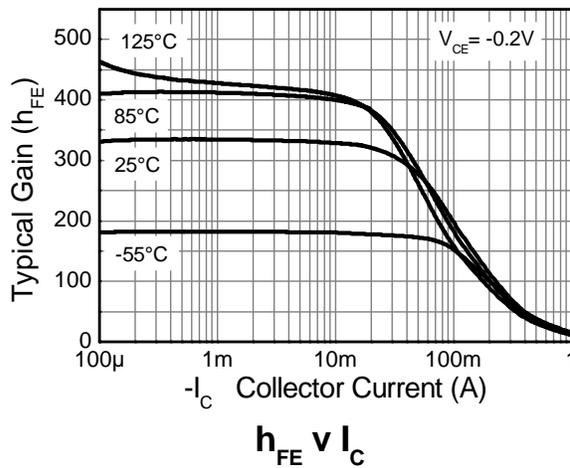
**ZXTP4003G**

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

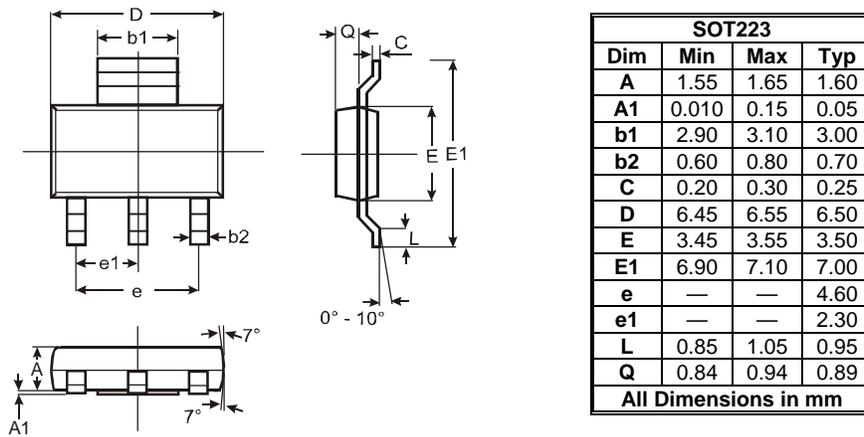
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Emitter Breakdown Voltage (Note 6)	$BV_{CEO}$	-100	-170	-	V	$I_C = -10\text{mA}$
Collector Cut-off Current	$I_{CBO}$	-	-	-50	nA	$V_{CB} = -100\text{V}$
Emitter Cut-off Current	$I_{EBO}$	-	-	-50	nA	$V_{EB} = -7\text{V}$
Static Forward Current 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 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

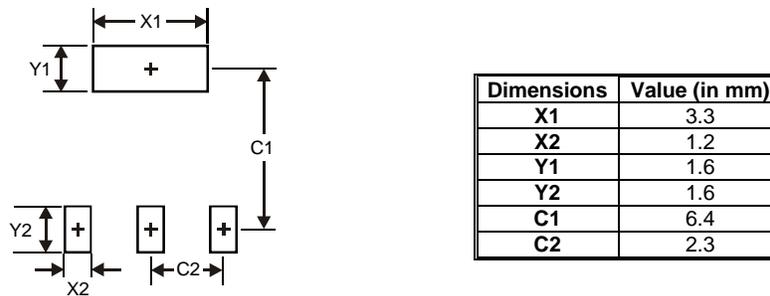
**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified



**Package Outline Dimensions**



**Suggested Pad Layout**



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