

## Features

- Low Turn-On Voltage
- Fast Switching
- PN Junction Guard Ring for Transient And ESD Protection
- Ultra-Small Surface Mount Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **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 refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**

## Mechanical Data

- Package: X1-DFN1006-2
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 Per J-STD-020
- Terminals: Finish - NiPdAu Annealed Over Copper Leadframe. Solderable Per MIL-STD-202, Method 208 (E4)
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2



Top View



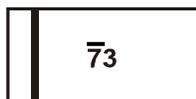
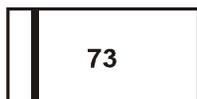
Bottom View

## Ordering Information (Note 4)

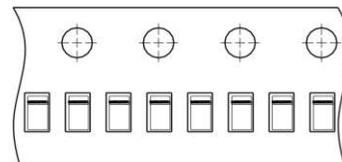
Part Number	Package	Packing	
		Qty.	Carrier
BAS70LP-7B	X1-DFN1006-2	10,000	Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



73 &  $\bar{7}3$  = Product Type Marking Code  
Bar Denotes Cathode Side



**Maximum Ratings** @T<sub>A</sub> = +25°C, unless otherwise specified.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	70	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
Forward Continuous Current (Note 5)	I <sub>FM</sub>	70	mA
Non-Repetitive Peak Forward Surge Current @ t <sub>p</sub> < 1.0s	I <sub>FSM</sub>	800	mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Power Dissipation (Note 5)	P <sub>D</sub>	430	mW
Typical Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	295	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** @T<sub>A</sub> = +25°C, unless otherwise specified.

Characteristic	Symbol	Min	Typ.	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	70	—	—	V	I <sub>R</sub> = 10μA
Forward Voltage	V <sub>F</sub>	—	—	0.42	V	I <sub>F</sub> = 1.0mA, T <sub>J</sub> = +25°C
		—	—	0.75		I <sub>F</sub> = 10mA, T <sub>J</sub> = +25°C
		—	—	0.96		I <sub>F</sub> = 15mA, T <sub>J</sub> = +25°C
Leakage Current (Note 6)	I <sub>R</sub>	—	—	0.1	μA	V <sub>R</sub> = 50V, T <sub>J</sub> = +25°C
		—	—	10		V <sub>R</sub> = 70V, T <sub>J</sub> = +25°C
Total Capacitance	C <sub>T</sub>	—	1	—	pF	V <sub>R</sub> = 0V, f = 1.0MHz
Reverse Recovery Time	t <sub>RR</sub>	—	1.6	—	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA to I <sub>R</sub> = 1.0mA, I <sub>RR</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

Notes: 5. Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.  
6. Short duration pulse test used to minimize self-heating effect.

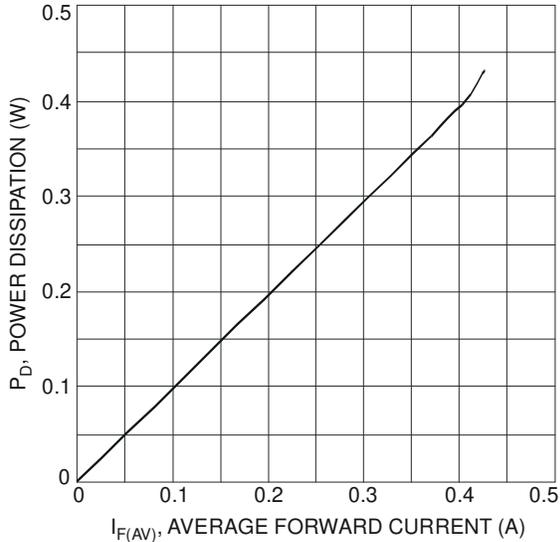


Fig. 1 Forward Power Dissipation

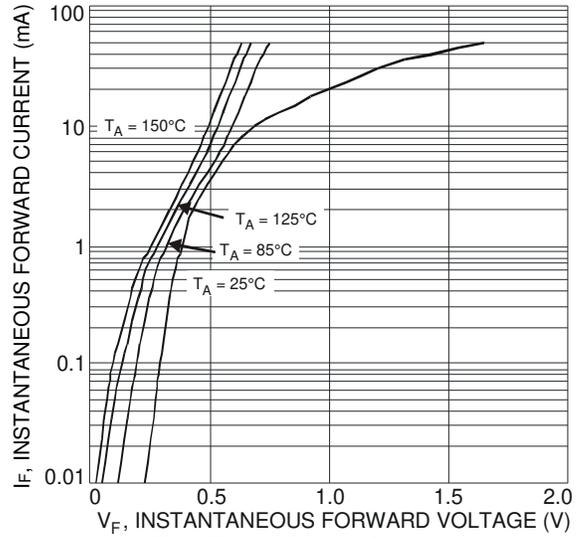


Fig. 2 Typical Forward Characteristics

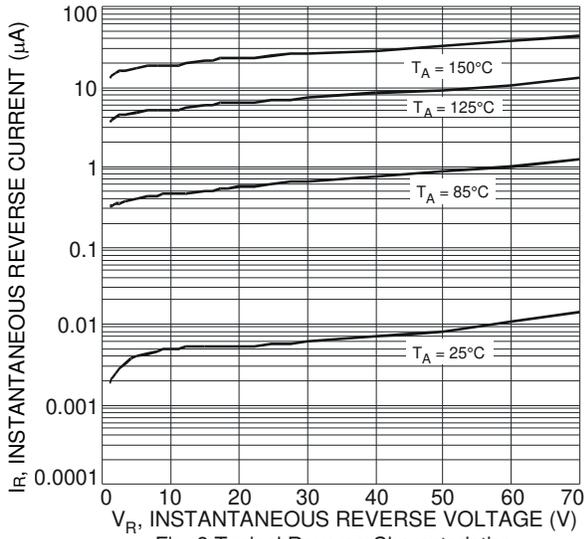


Fig. 3 Typical Reverse Characteristics

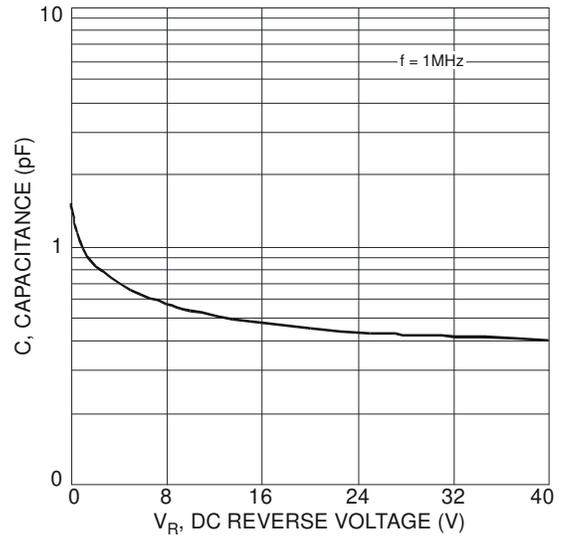


Fig. 4 Total Capacitance vs. Reverse Voltage

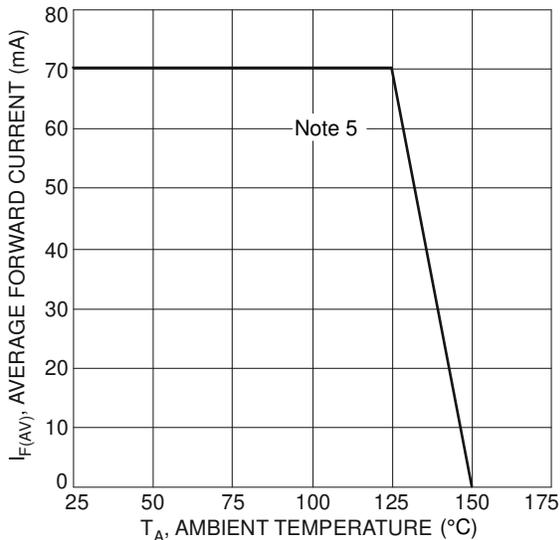


Fig. 5 Forward Current Derating Curve

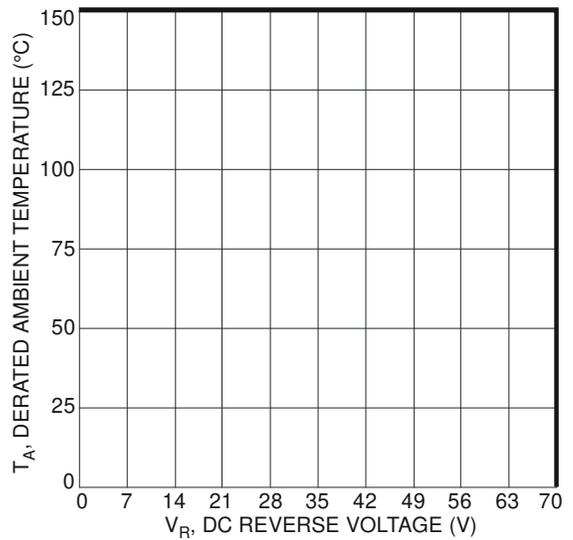
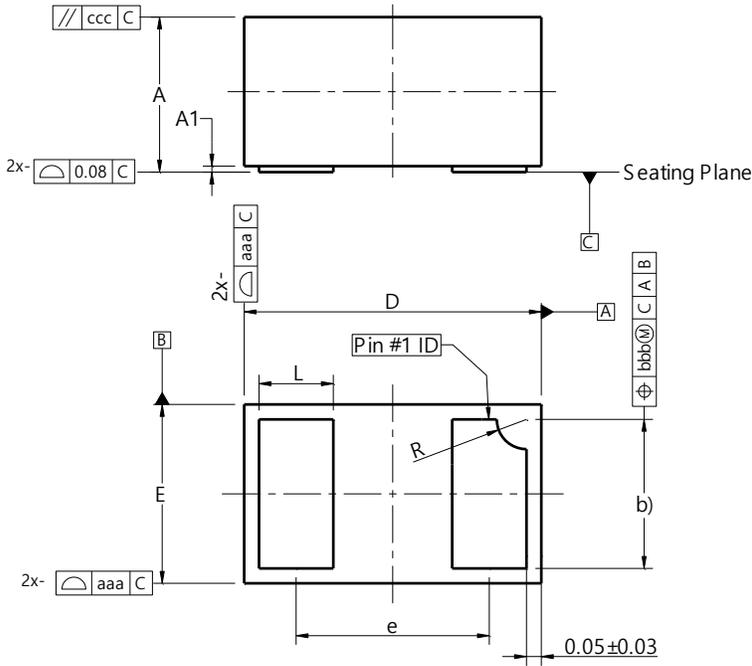


Fig. 6 Operating Temperature Derating

**Package Outline Dimensions**

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

**X1-DFN1006-2**

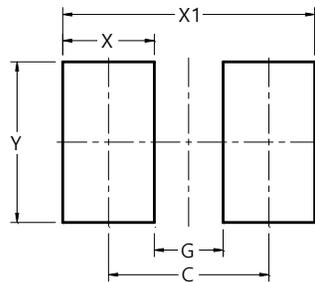


X1-DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0.00	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	--	--	0.65
L	0.20	0.30	0.25
R	0.05	0.15	0.10
aaa	0.15		
bbb	0.05		
ccc	0.05		
All Dimensions in mm			

**Suggested Pad Layout**

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

**X1-DFN1006-2**



Dimensions	Value (in mm)
C	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70

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