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[Diodes Incorporated](#)  
[BAS16HLP-7](#)

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**BAS16HLP**

**SURFACE MOUNT FAST SWITCHING DIODE**

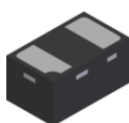
**Features**

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Breakdown Voltage
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

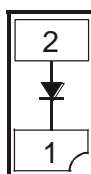
**Mechanical Data**

- Case: X1-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Marking Information
- Terminals: Finish - NiPdAu over Copper Leadframe. Solderable per MIL-STD-202, Method 208@4
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2



Bottom View



Device Schematic

**Ordering Information** (Note 4)

Part Number	Case	Packaging
BAS16HLP-7	X1-DFN1006-2	3,000/Tape & Reel
BAS16HLP-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) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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 <http://www.diodes.com/products/packages.html>.

**Marking Information**

<p>BAS16HLP-7</p> <div style="border: 1px solid black; width: 100px; height: 50px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <span style="font-size: 20px; margin-right: 5px;">•</span> <span style="font-weight: bold; font-size: 18px;">T9</span> </div> <p style="text-align: center; font-size: 10px;">Top View Dot Denotes Cathode Side</p>	<p>BAS16HLP-7B</p> <div style="border: 1px solid black; width: 100px; height: 50px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border-left: 2px solid black; width: 10px; height: 100%;"></div> <span style="font-weight: bold; font-size: 18px; margin-left: 10px;">T9</span> </div> <p style="text-align: center; font-size: 10px;">Top View Bar Denotes Cathode Side</p>	<p>T9 = Product Type Marking Code</p>
<p><b>OR</b></p>		
<div style="border: 1px solid black; width: 100px; height: 50px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border-left: 2px solid black; width: 10px; height: 100%;"></div> <span style="font-weight: bold; font-size: 18px; margin-left: 10px;">T9</span> </div> <p style="text-align: center; font-size: 10px;">Top View Bar Denotes Cathode Side</p>		

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

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V <sub>RM</sub>	125	V
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	100	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	71	V
Forward Continuous Current	I <sub>FM</sub>	215	mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	@ t = 1.0μs	4
		@ t = 1.0ms	1
		@ t = 1.0s	0.5

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	250	mW
Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	500	°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	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	100	—	V	I <sub>R</sub> = 100μA
Forward Voltage	V <sub>F</sub>	—	0.715	V	I <sub>F</sub> = 1.0mA
		—	0.855		I <sub>F</sub> = 10mA
		—	1.0		I <sub>F</sub> = 50mA
		—	1.25		I <sub>F</sub> = 150mA
Peak Reverse Current (Note 6)	I <sub>R</sub>	—	500	nA	V <sub>R</sub> = 80V
		—	50	μA	V <sub>R</sub> = 80V, T <sub>J</sub> = +150°C
		—	30	μA	V <sub>R</sub> = 25V, T <sub>J</sub> = +150°C
		—	30	nA	V <sub>R</sub> = 25V
Total Capacitance	C <sub>T</sub>	—	1.5	pF	V <sub>R</sub> = 0V, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	4.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

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



**BAS16HLP**

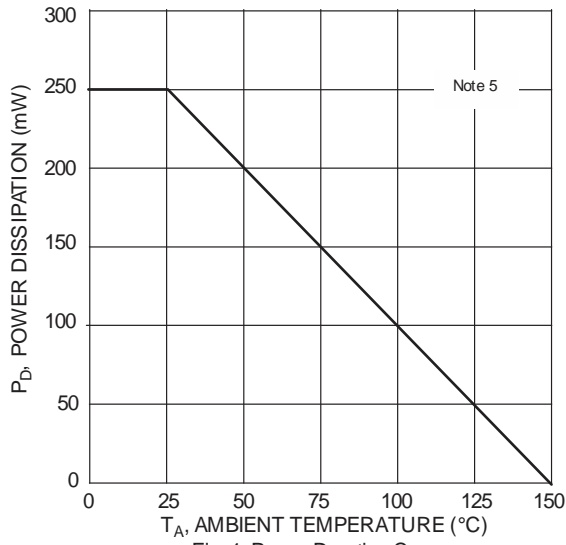


Fig. 1 Power Derating Curve

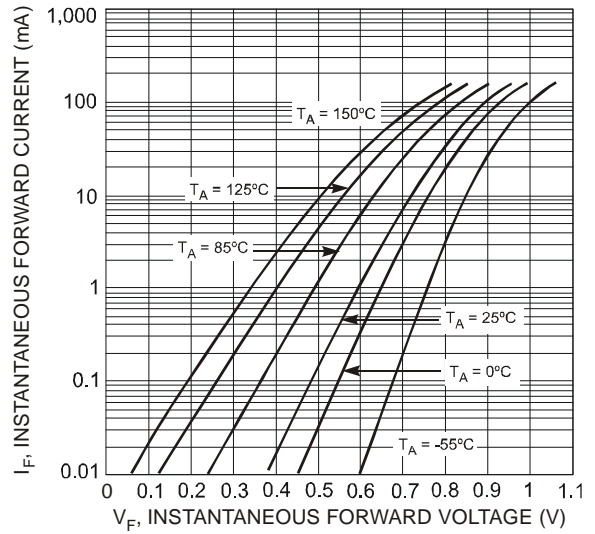


Fig. 2 Typical Forward Characteristics

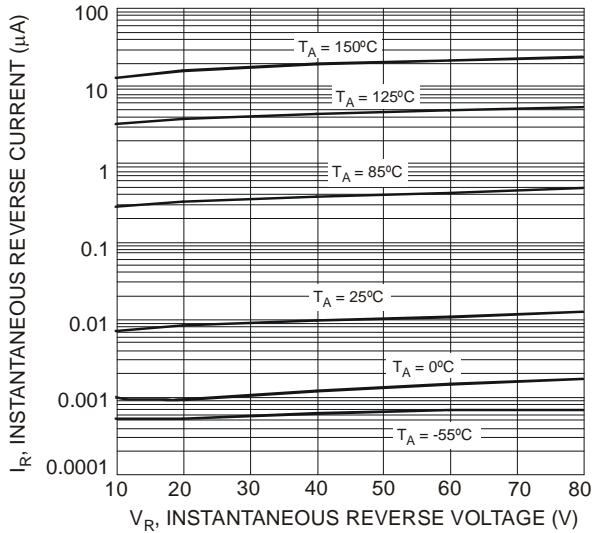


Fig. 3 Typical Reverse Characteristics

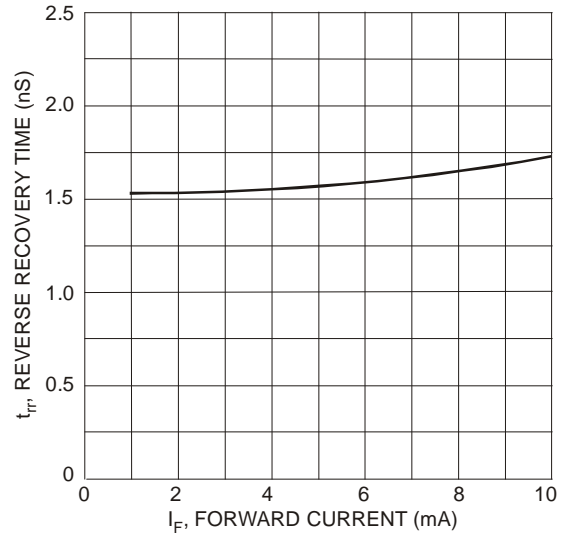


Fig. 4 Reverse Recovery Time vs. Forward Current

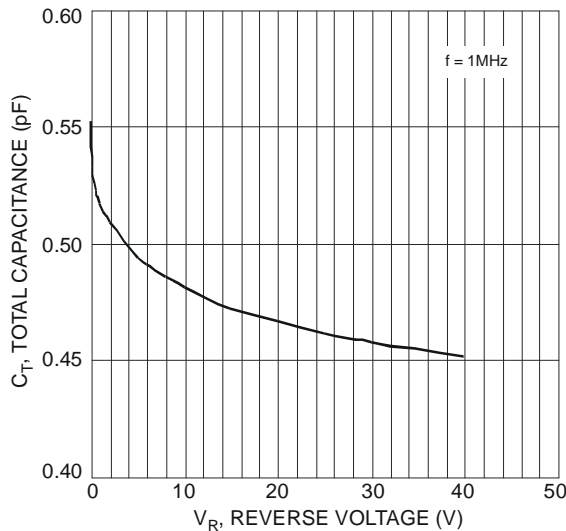
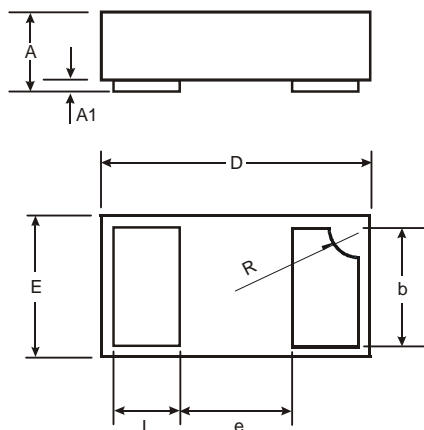


Fig. 5 Typical Total Capacitance

### Package Outline Dimensions

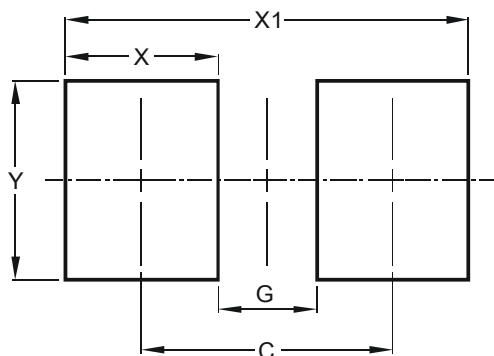
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



X1-DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	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	-	-	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10
All Dimensions in mm			

### Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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

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