



**THE DATASHEET OF  
BAS521LPQ-7B**



OBSOLETE – PART DISCONTINUED

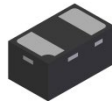
**Features**

- Fast Switching Speed: Maximum of 50ns
- High Reverse Breakdown Voltage: 325V
- Low Leakage Current: Maximum of 50nA when  $V_R = 5V$  or Maximum of 150nA when  $V_R = 250V$  at Room Temperature
- Ultra Small Plastic SMD Package: 1.0mm x 0.6mm x 0.5mm
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen- and Antimony-Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High-Reliability**
- **PPAP Capable (Note 4)**

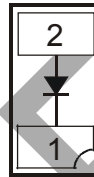
**Mechanical Data**

- 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
- Terminals: Finish - NiPdAu over Copper Lead-Frame. Solderable per MIL-STD-202, Method 208 ④
- Weight: 0.0009 grams (Approximate)

X1-DFN1006-2



Bottom View



Device Schematic

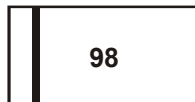
**Ordering Information** (Note 5)

Part Number	Qualification	Case	Packaging
BAS521LPQ-7B	Automotive	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. Automotive products are AEC-Q10x qualified and are PPAP capable. Refer to <https://www.diodes.com/quality/>.
  5. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

**Marking Information**

BAS521LP-7B



Top View  
Bar Denotes  
Cathode Side

98 = Product Type Marking Code

**Maximum Ratings** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	325	V
Working Peak Reverse Voltage DC Blocking Voltage	$V_{RWM}$ $V_R$	325	V
Forward Current (Note 6)	$I_F$	400	mA
Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$	$I_{FSM}$	8.0	A
Repetitive Peak Forward Current @ $t = 8.3\text{ms}$	$I_{FRM}$	3.0	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	$P_D$	400	mW
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{\theta JA}$	312	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	300	—	V	$I_R = 100\mu\text{A}$
Forward Voltage	$V_F$	—	1.1	V	$I_F = 100\text{mA}$
Reverse Current (Note 7)	$I_R$	—	50	nA	$V_R = 5\text{V}$
		—	150	nA	$V_R = 250\text{V}$
		—	100	$\mu\text{A}$	$V_R = 250\text{V}, T_J = +150^\circ\text{C}$
Total Capacitance	$C_T$	—	5	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	50	ns	$I_F = I_R = 30\text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$

- Notes: 6. Part is mounted on a FR-4 substrate PC board, with 1" x 1" 2oz copper pad.  
7. Short duration pulse test used to minimize self-heating effect.

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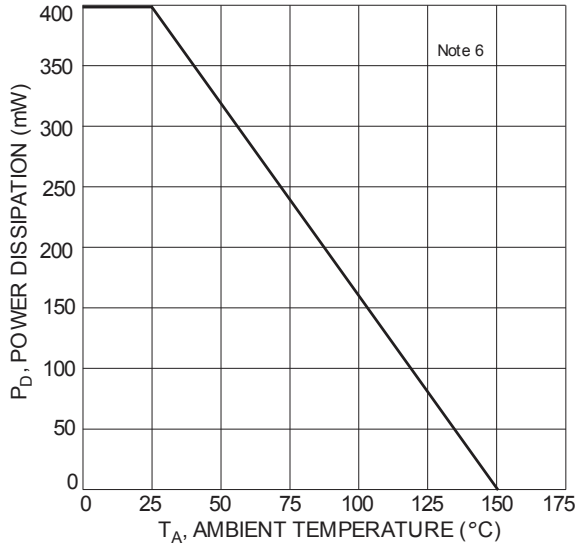


Fig. 1 Power Derating Curve

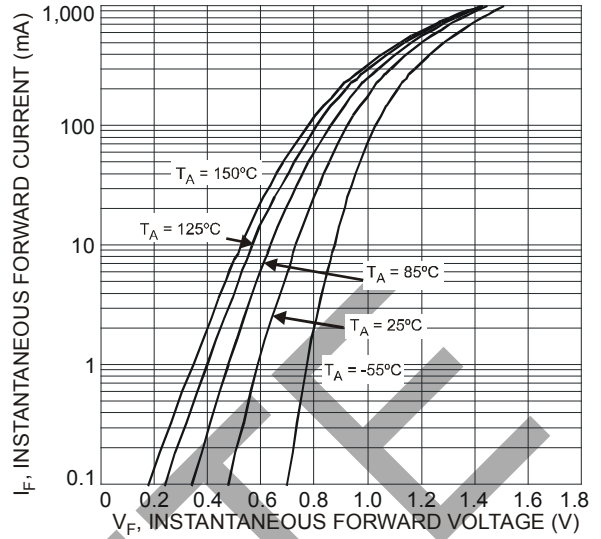


Fig. 2 Typical Forward Characteristics

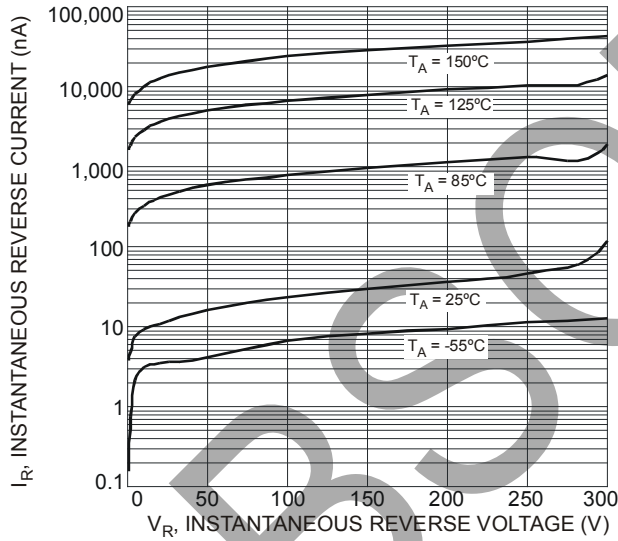


Fig. 3 Typical Reverse Characteristics

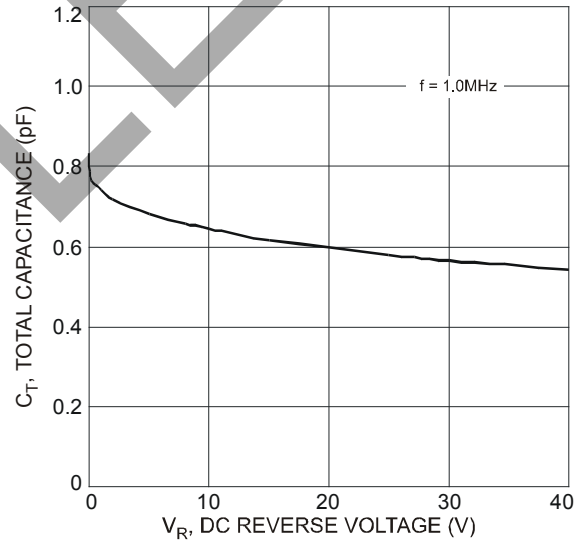
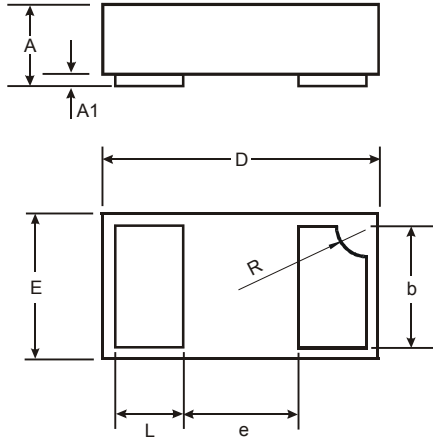


Fig. 4 Total Capacitance vs. Reverse Voltage

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**Package Outline Dimensions**

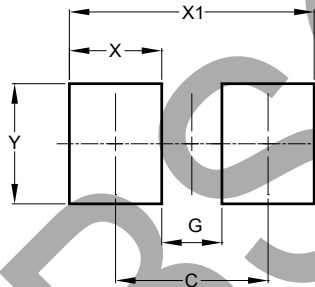
Please see <http://www.diodes.com/package-outlines.html> for the latest version.



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 <http://www.diodes.com/package-outlines.html> 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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