





SURFACE MOUNT SCHOTTKY BARRIER DIODE

Features

- Low-Forward Voltage Drop
- Fast Switching
- Ultra-Small Leadless Surface-Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.
 - https://www.diodes.com/quality/product-definitions/
- An automotive-compliant part is available under separate datasheet (<u>BAT54LPQ</u>)

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
- Terminal Connections: Cathode Bar
- Terminals: Finish NiPdAu Annealed over Copper Leadframe.
 Solderable per MIL-STD-202, Method 208⁴
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2





Top View

Bottom View

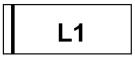
Ordering Information (Note 4)

Part Number	Package Package	Packing		
Fait Number	Fackage	Qty.	Carrier	
BAT54LP-7	X1-DFN1006-2	3,000	Tape & Reel	
BAT54LP-7B	X1-DFN1006-2	10,000	Tape & Reel	

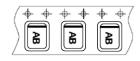
Notes:

- 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



L1



Top View

Top View

Bar Denotes Cathode Side

L1 or $\overline{L}1$ = Product Type Marking Code Bar Denotes Cathode Side



Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _R WM V _R	30	V
Forward Continuous Current	lF	200	mA
Repetitive Peak Forward Current	IFRM	300	mA
Forward Surge Current @ t < 1.0	IFSM	600	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	312	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	Reja	400	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V _{(BR)R}	30	_	_	V	I _R = 100μA
Forward Voltage	VF		_	240 320 400 500 1,000	mV	IF = 0.1mA IF = 1mA IF = 10mA IF = 30mA IF = 100mA
Reverse Leakage Current (Note 6)	IR		_	2.0	μΑ	V _R = 25V
Total Capacitance	Ст			10	pF	V _R = 1.0V, f = 1.0MHz
Reverse Recovery Time	t _{RR}	_	_	5.0	ns	$I_F = 10$ mA through $I_R = 10$ mA to $I_R = 1.0$ mA, $R_L = 100$ Ω

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/package-outlines.html. 6. Short duration pulse test used to minimize self-heating effect.



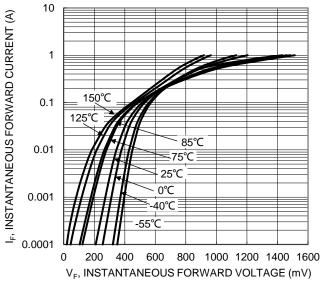
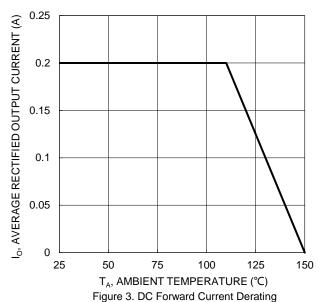
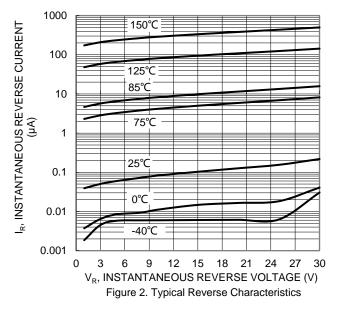
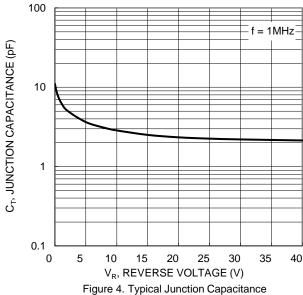


Figure 1. Typical Forward Characteristics





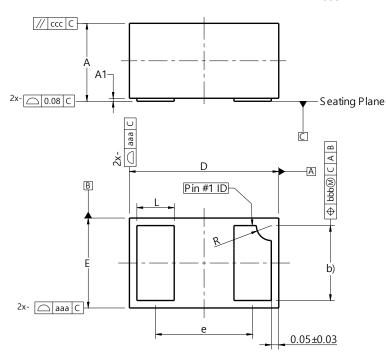




Package Outline Dimensions

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

X1-DFN1006-2

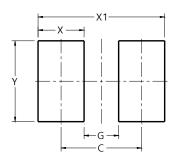


X1-DFN1006-2				
Dim	Min	Max	Тур	
Α	0.47	0.53	0.50	
A1	0.00	0.05	0.03	
b	0.45	0.55	0.50	
D	0.95	1.075	1.00	
Е	0.55	0.675	0.60	
e			0.65	
L	0.20	0.30	0.25	
R	0.05	0.15	0.10	
aaa	0.15			
bbb	0.05			
CCC	0.05			
All Dimensions in mm				

Suggested Pad Layout

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

X1-DFN1006-2



Dimensions	Value		
	(in mm)		
С	0.70		
G	0.30		
Х	0.40		
X1	1.10		
Υ	0.70		



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