



24V BIDIRECTIONAL TVS DIODE

Product Summary

V _{BR (min)}	IPP (max)	C _{T (typ)}
26V	2A	6pF

Description

This new generation TVS is designed to protect sensitive electronics from the damage due to ESD. The combination of small size and high ESD surge capability makes it ideal for use in portable applications such as cellular phones, digital cameras, and MP3 players. The sidewall plating option of this package allows optical inspection after soldering reflow for easy and reliable quality control.

Applications

- Cellular Handsets
- Portable Electronics
- Computers and Peripheral

Features

- Low Profile Package (0.53mm max) and Ultra-small PCB Footprint Area (1.08 * 0.68mm max) Suitable for Compact Portable Electronics
- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±20kV, Contact ±20kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- PPAP Capable

Mechanical Data

- Case: U-DFN1006-2/SWP with sidewall plating
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208 ^(e)
- Weight: 0.001 grams (approximate)



Bottom View



Device Schematic

Ordering Information (Note 4)

Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
D24V0L1B2LPS-7B	AEC-Q101	SG	7	8	10,000/Tape & Reel
D24V0L1B2LPSQ-7B	Automotive	SG	7	8	10,000/Tape & Reel

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 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

Notes:



SG = Product Type Marking Code



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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P _{PP}	90	W	8/20µs, Per Figure 3
Peak Pulse Current	I _{PP}	2	A	8/20µs, Per Figure 3
ESD Protection – Contact Discharge	V _{ESD_Contact}	±20	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V _{ESD_Air}	±20	kV	IEC 61000-4-2 Standard

Thermal Characteristics

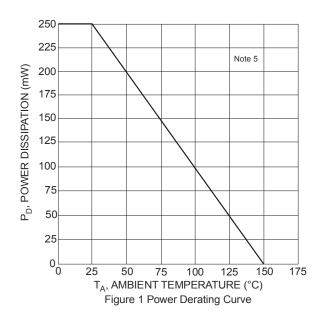
	1	1	
Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	PD	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{ ext{ heta}JA}$	500	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

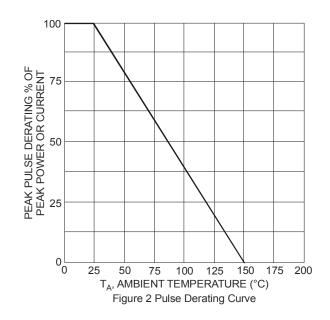
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Standoff Voltage	V _{RWM}	—	_	24	V	—
Channel Leakage Current (Note 6)	I _{RM}	—	—	100	nA	V _{RWM} = 24V
Clamping Voltage, Positive Transients	N	—	—	42	V	I _{PP} = 1A, t _p = 8/20μS
	V _{CL}	—	—	46	V	I _{PP} = 2A, t _p = 8/20µS
Breakdown Voltage	V _{BR}	26	—	32	V	I _R = 1mA
Channel Input Capacitance	Ст	—	6	10	pF	V _R = 0V, f = 1MHz

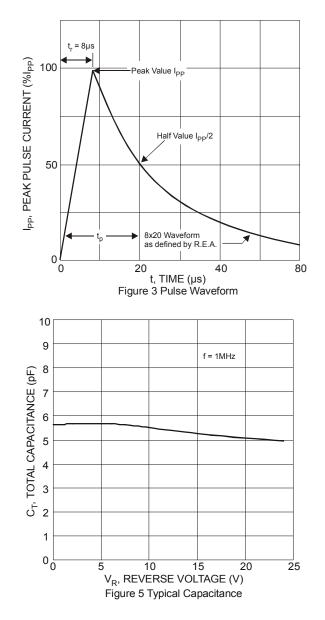
Notes: 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at http://www.diodes.com.

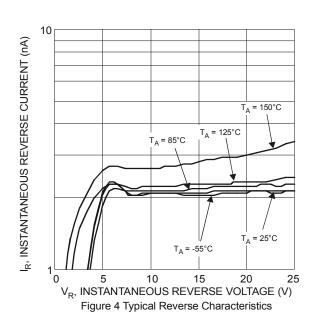
6. Short duration pulse test used to minimize self-heating effect.





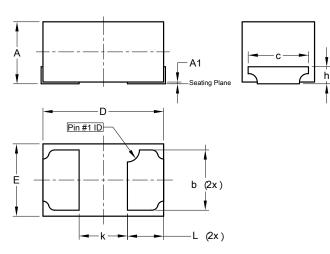






Package Outline Dimensions

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

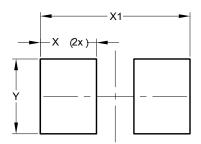


U	U-DFN1006-2/SWP					
Dim	Min	Max	Тур			
Α	0.47	0.53	0.50			
A1	0.0	0.05	0.03			
b	0.45	0.55	0.50			
С	0.55 REF					
D	0.95	1.05	1.00			
Е	0.55	0.65	0.60			
h	0.17 REF					
k	0.37 REF					
L	0.25	0.35	0.30			
All	All Dimensions in mm					



Suggested Pad Layout

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



Dimensions	Value (in mm)
Х	0.45
X1	1.20
Y	0.60

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