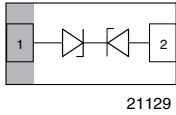
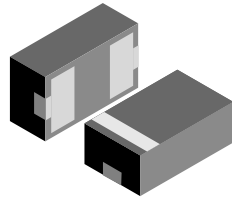


# Bidirectional Symmetrical (BiSy) Single Line ESD-Protection Diode in LLP1006-2M



21129



20855

## MARKING (example only)



Bar = pin 1 marking  
 X = date code  
 Y = type code (see table below)

## LINKS TO ADDITIONAL RESOURCES



## FEATURES

- Ultra compact LLP1006-2M package
- Low package height < 0.4 mm
- 1-line ESD protection
- Working range  $\pm 3.5$  V
- Low leakage current < 0.1  $\mu$ A
- Low load capacitance  $C_D = 12.5$  pF
- ESD immunity acc. IEC 61000-4-2  
 $\pm 18$  kV contact discharge  
 $\pm 20$  kV air discharge
- Soldering can be checked by standard vision inspection, no X-ray necessary
- Pin plating NiPdAu (e4) no whisker growth
- PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## ORDERING INFORMATION

DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL (8 mm TAPE ON 7" REEL)	MINIMUM ORDER QUANTITY
VCUT03B1-DD1	VCUT03B1-DD1-G-08	8000	8000

## PACKAGE DATA

DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VCUT03B1-DD1	LLP1006-2M	N	0.72 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

## ABSOLUTE MAXIMUM RATINGS VCUT03B1-DD1

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	Acc. IEC 61000-4-5; $t_p = 8/20$ $\mu$ s; single shot	$I_{PPM}$	3.5	A
Peak pulse power	Pin 1 to pin 2 Acc. IEC 61000-4-5; $t_p = 8/20$ $\mu$ s; single shot	$P_{PP}$	40	W
ESD immunity	Contact discharge acc. IEC61000-4-2; 10 pulses	$V_{ESD}$	$\pm 18$	kV
	Air discharge acc. IEC61000-4-2; 10 pulses		$\pm 20$	
Operating temperature	Junction temperature	$T_J$	-40 to +125	°C
Storage temperature		$T_{STG}$	-55 to +150	°C

PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

This Vishay product is protected by one or more United States and international patents.



CUT THE SPIKES WITH VCUT03B1-DD1

The VCUT03B1-DD1 is a bidirectional and symmetrical (BiSy) ESD protection device which clamps positive and negative overvoltage transients to ground. Connected between the signal or data line and the ground the VCUT03B1-DD1 offers a high isolation (low leakage current, low capacitance) within the specified working range. Due to the short leads and small package size of the tiny LLP1006-2M package the line inductance is very low, so that fast transients like an ESD strike can be clamped with minimal over- or undershoots.

Table with 7 columns: PARAMETER, TEST CONDITIONS/REMARKS, SYMBOL, MIN., TYP., MAX., UNIT. Rows include Protection paths, Reverse stand-off voltage, Reverse voltage, Reverse current, Reverse breakdown voltage, Reverse clamping voltage, and Capacitance.

TYPICAL CHARACTERISTICS (T\_amb = 25 °C, unless otherwise specified)

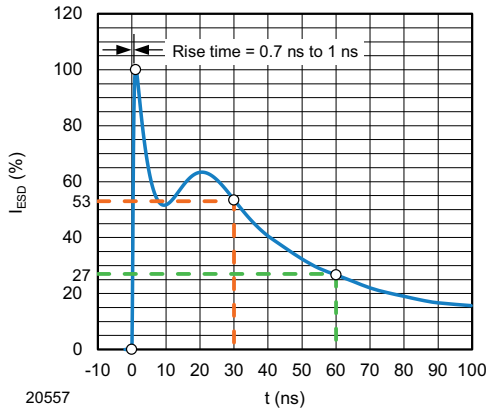


Fig. 1 - ESD Discharge Current Wave Form acc. IEC 61000-4-2 (330 Ω/150 pF)

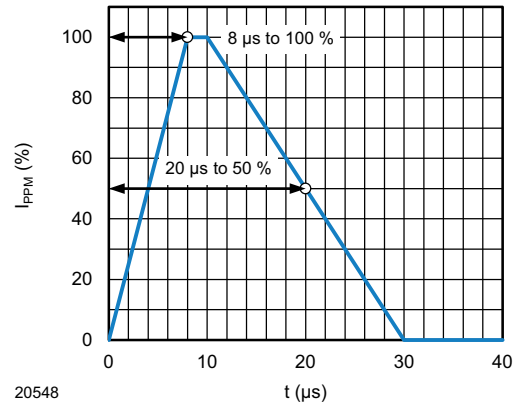


Fig. 2 - 8/20 μs Peak Pulse Current Wave Form acc. IEC 61000-4-5

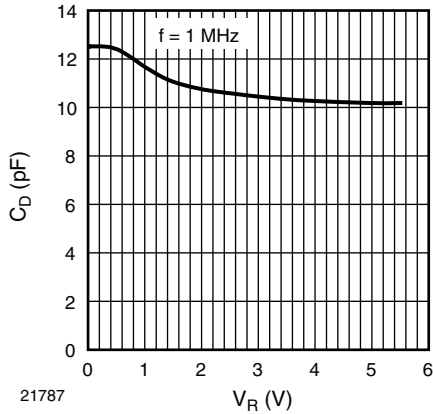


Fig. 3 - Typical Capacitance  $C_D$  vs. Reverse Voltage  $V_R$

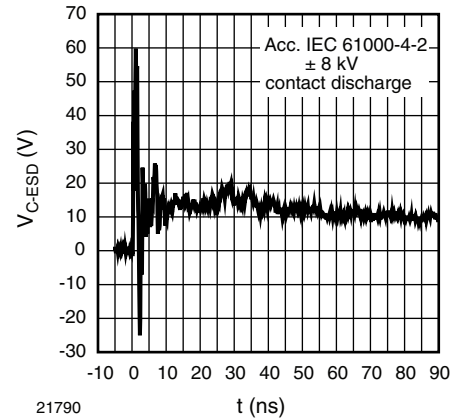


Fig. 6 - Typical Peak Clamping Voltage  $V_C$  vs. Peak Pulse Current  $I_{PP}$

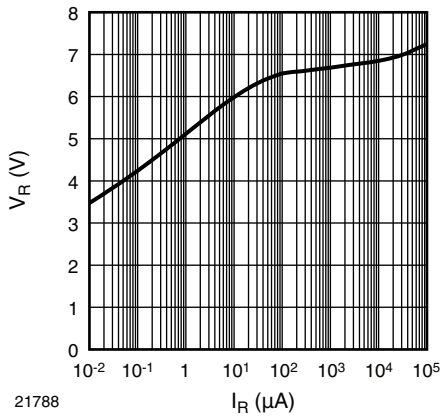


Fig. 4 - Typical Forward Current  $I_F$  vs. Forward Voltage  $V_F$

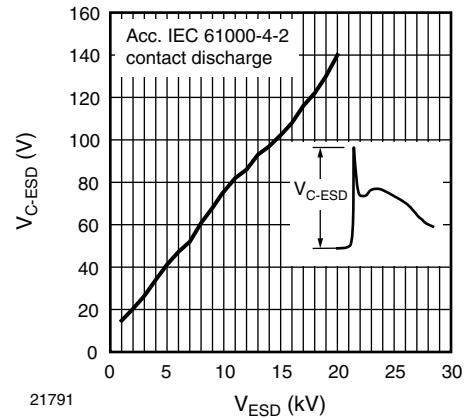


Fig. 7 - Typical Clamping Performance at + 8 kV Contact Discharge (acc. IEC 61000-4-2)

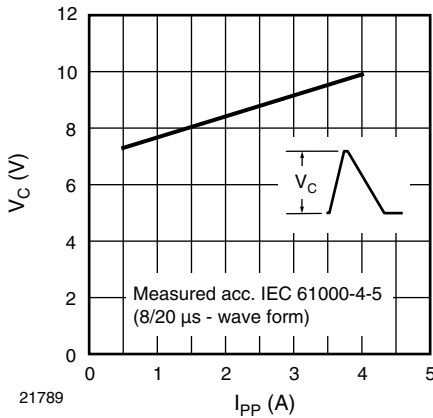
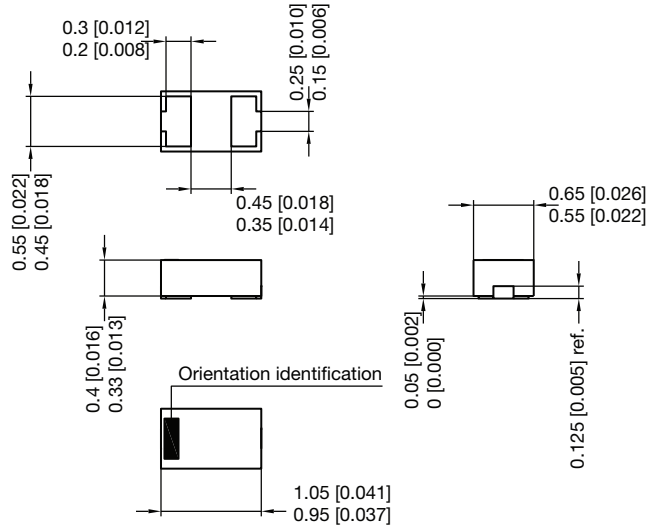


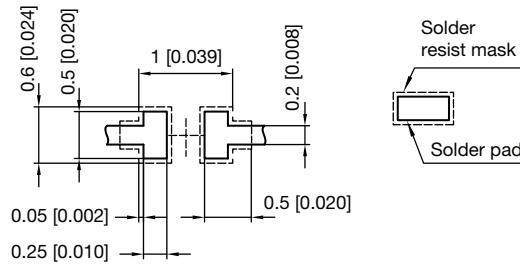
Fig. 5 - Typical Reverse Voltage  $V_R$  vs. Reverse Current  $I_R$



PACKAGE DIMENSIONS in millimeters (inches): **LLP1006-2M**

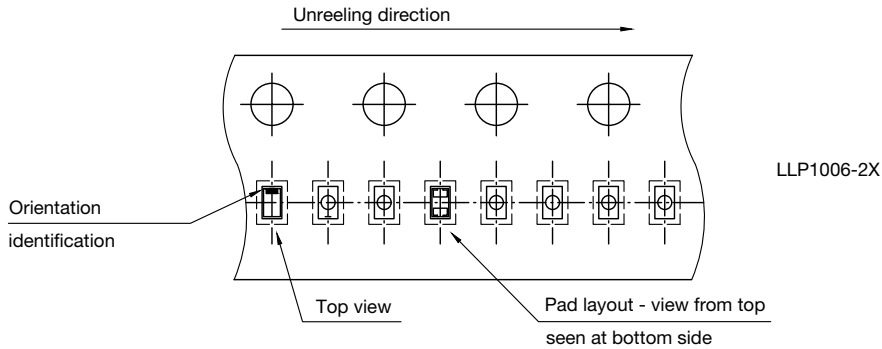


Foot print recommendation:



Pad Design Patented:  
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Document no.: S8-V-3906.04-005 (4)  
Rev. 7 - Date: 11.May 2016  
20812



S8-V-3906.04-017 (4)  
02.05.2017  
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