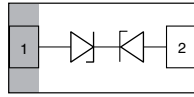
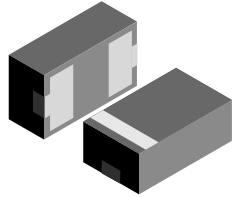


Bidirectional Symmetrical (BiSy) Single Line ESD-Protection Diode in LLP1006-2L



21129



20855

MARKING (example only)


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

FEATURES

- Ultra compact LLP1006-2L package
- Low package profile < 0.4 mm
- 1-line ESD-protection
- Working range ± 7 V
- Low leakage current $I_R < 0.1 \mu\text{A}$
- Low load capacitance $C_D = 14 \text{ pF}$
- ESD-protection acc. IEC 61000-4-2
 $\pm 30 \text{ kV}$ contact discharge
 $\pm 30 \text{ kV}$ air discharge
- Soldering can be checked by standard vision inspection; no X-ray necessary
- Pin plating NiPdAu (e4) no whisker growth
- e4 - precious metal (e.g. Ag, Au, NiPd, NiPdAu) (no Sn)
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


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ORDERING INFORMATION			
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL (8 mm TAPE ON 7" REEL)	MINIMUM ORDER QUANTITY
VCUT07B1-HD1	VCUT07B1-HD1-G4-08	8000	8000

PACKAGE DATA						
DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VCUT07B1-HD1	LLP1006-2L	U	0.72 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

ABSOLUTE MAXIMUM RATINGS				
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	acc. IEC 61000-4-5; $t_p = 8/20 \mu\text{s}$; single shot	I_{PPM}	4	A
Peak pulse power	Pin 1 to pin 2 acc. IEC 61000-4-5; $t_p = 8/20 \mu\text{s}$; single shot	P_{PP}	60	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Operating temperature	Junction temperature	T_J	- 40 to + 125	°C
Storage temperature		T_{stg}	- 55 to + 150	°C

ELECTRICAL CHARACTERISTICS (pin 1 to pin 2 or pin 2 to pin 1) $(T_{amb} = 25 \text{ °C, unless otherwise specified})$						
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	$N_{channel}$	-	-	1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	7	V
Reverse voltage	at $I_R = 0.1 \mu\text{A}$	V_R	7	-	-	V
Reverse current	at $V_{RWM} = 7 \text{ V}$	I_R	-	-	0.1	μA
Reverse breakdown voltage	at $I_R = 1 \text{ mA}$	V_{BR}	7.3	-	-	V
Reverse clamping voltage	at $I_{PP} = 1 \text{ A}$	V_C	-	9	12	V
	at $I_{PP} = I_{PPM} = 4 \text{ A}$		-	-	15	V
Capacitance	at $V_R = 0 \text{ V}$; $f = 1 \text{ MHz}$	C_D	-	14	16	pF
	at $V_R = 2.5 \text{ V}$; $f = 1 \text{ MHz}$		-	11	-	pF

CUT THE SPIKES WITH VCUT07B1-HD1:

The VCUT07B1-HD1 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 VCUT07B1-HD1 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 LLP1006-2L package the line inductance is very low, so that fast transients like an ESD-strike can be clamped with minimal over- or undershoots.

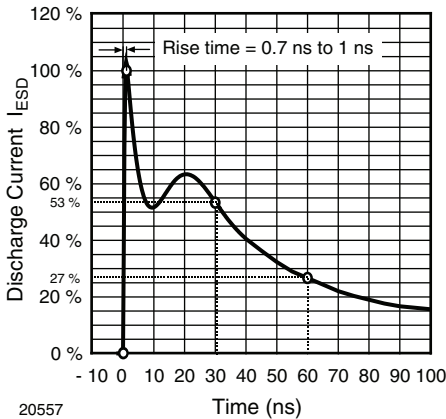
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


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

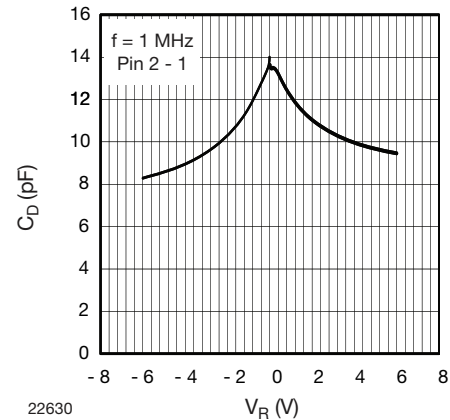


Fig. 3 - Typical Capacitance C_D vs. Reverse Voltage V_R

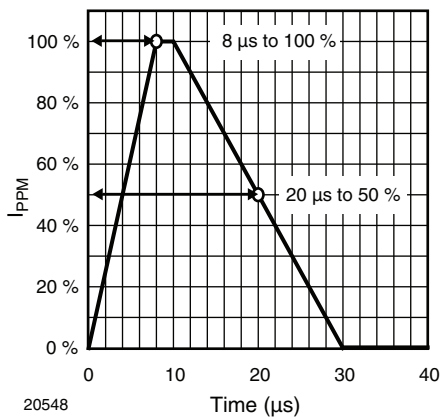


Fig. 2 - 8/20 μs Peak Pulse Current Wave Form
acc. IEC 61000-4-5

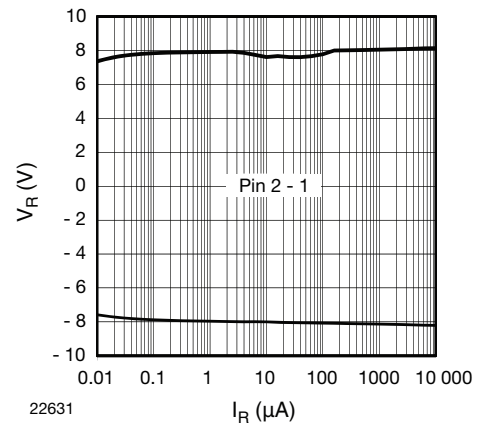


Fig. 4 - Typical Reverse Voltage V_R vs. Reverse Current I_R

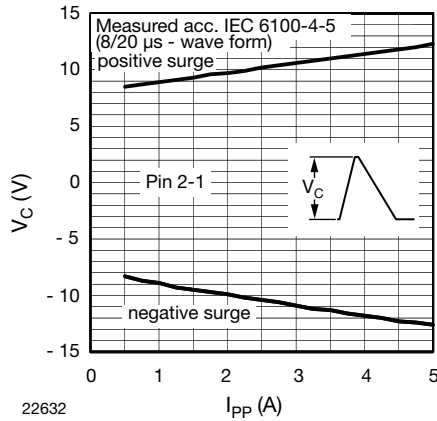


Fig. 5 - Typical Peak Clamping Voltage V_C vs. Peak Pulse Current I_{PP}

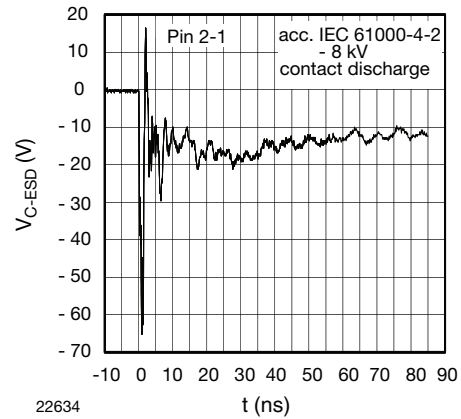


Fig. 7 - Typical Clamping Performance at + 8 kV Contact Discharge (acc. IEC 61000-4-2)

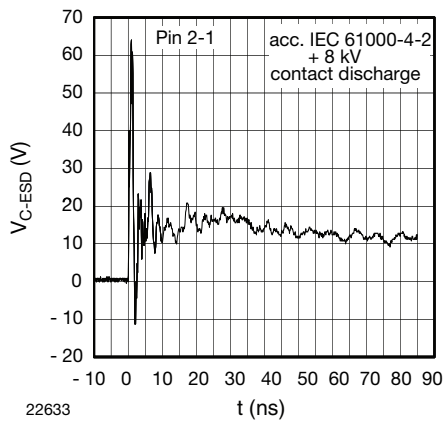


Fig. 6 - Typical Clamping Performance at + 8 kV Contact Discharge (acc. IEC 61000-4-2)

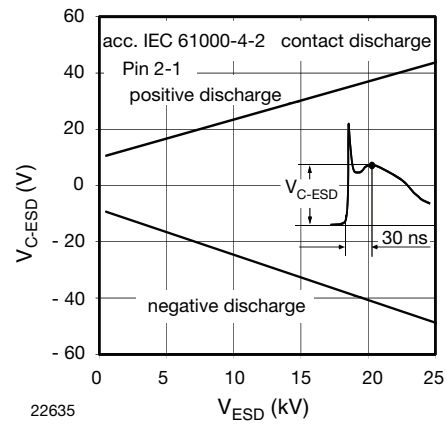
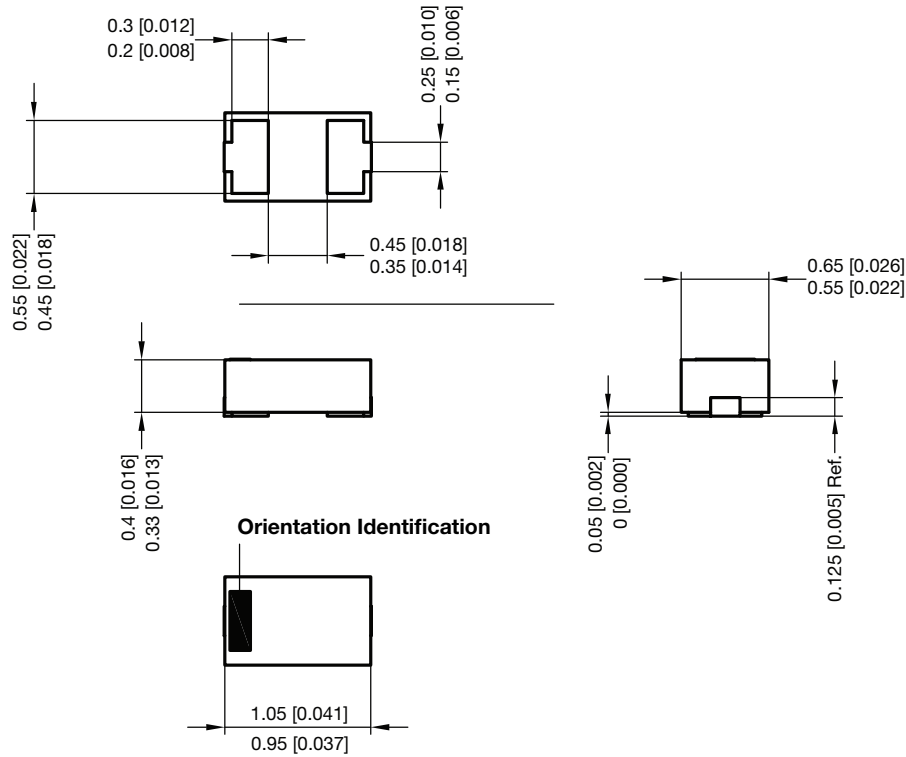


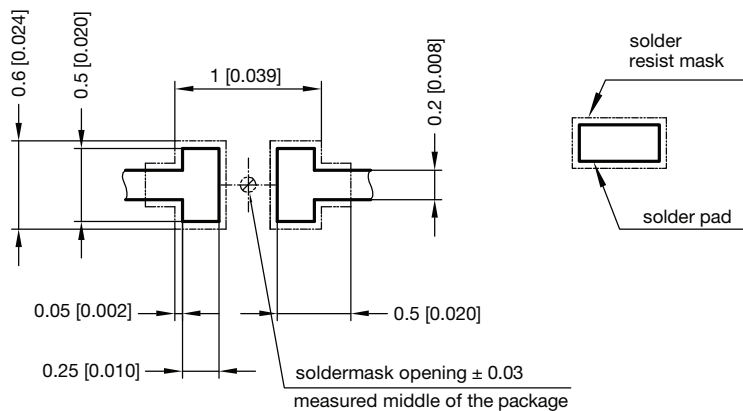
Fig. 8 - Typical Peak Clamping Voltage at ESD Contact Discharge (acc. IEC 61000-4-2)



PACKAGE DIMENSIONS in millimeters (Inches): LLP1006-2L



Foot print recommendation:



Created - Date: 13. July. 2007
 Rev. 5 - Date: 21 April 2010
 Document no.:S8-V-3906.04-005 (4)
 20812



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