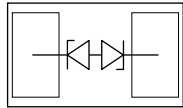
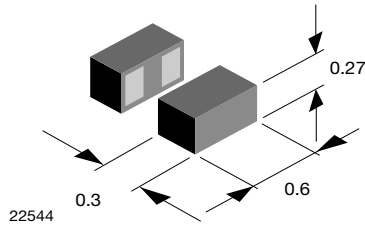


# Bidirectional Symmetrical (BiSy) Single Line ESD-Protection Diode in Silicon Package



22543



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## MARKING



## LINKS TO ADDITIONAL RESOURCES



## FEATURES

- Ultra compact CLP0603-2L package
- Low package height < 0.3 mm
- 1-line ESD-protection
- AEC-Q101 qualified available
- Working range  $\pm 10$  V
- Low leakage current < 0.05  $\mu$ A
- Low load capacitance  $C_D = 7.7$  pF (typ.)
- ESD-protection acc. IEC 61000-4-2  
 $\pm 24$  kV contact discharge  
 $\pm 24$  kV air discharge
- Lead plating: Au (e4)
- Lead material: Ni
- Topside coating
- e4 - precious metal (e.g. Ag, Au, NiPd, NiPdAu) (no Sn)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## Footprint and soldering recommendation:

 please see Application Note: [www.vishay.com/doc?85917](http://www.vishay.com/doc?85917)

ORDERING INFORMATION					
PART NUMBER (EXAMPLE)	AEC-Q101 QUALIFIED	ENVIRONMENTAL AND QUALITY CODE		PACKAGING CODE	ORDERING CODE (EXAMPLE)
		RoHS-COMPLIANT + LEAD (Pb)-FREE TERMINATIONS	GOLD PLATED	15K PER 7" REEL (8 mm TAPE) 15K/BOX = MOQ	
		GREEN			
VCUT10G1-SD0	-	G	4	-08	VCUT10G1-SD0-G4-08
VCUT10G1-SD0	H	G	4	-08	VCUT10G1-SD0HG4-08

PACKAGE DATA				
DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	SOLDERING CONDITIONS
VCUT10G1-SD0	CLP0603-2L	10	0.12 mg	Peak temperature max. 260 °C Reflow soldering according JEDEC® STD-020

ABSOLUTE MAXIMUM RATINGS				
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	acc. IEC 61000-4-5, 8/20 $\mu$ s/single shot	$I_{PPM}$	4	A
Peak pulse power	Pin 1 to pin 2 acc. IEC 61000-4-5; $t_p = 8/20$ $\mu$ s; single shot	$P_{PP}$	72	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	$V_{ESD}$	$\pm 24$	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		$\pm 24$	
Operating temperature	Junction temperature	$T_J$	-55 to +150	°C
Storage temperature		$T_{stg}$	-55 to +150	°C



CUT THE SPIKES WITH VCUT10G1-SD0

The VCUT10G1-SD0 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 VCUT10G1-SD0 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 CLP0603-2L package the line inductance is very low, so that fast transients like and ESD-strike can be clamped with minimal over- or undershoots.

Table with 7 columns: PARAMETER, TEST CONDITIONS/REMARKS, SYMBOL, MIN., TYP., MAX., UNIT. It lists electrical characteristics such as Protection paths, Reverse stand-off voltage, Reverse voltage, Reverse current, Reverse breakdown voltage, Reverse clamping voltage, Capacitance, Clamping voltage, and Dynamic resistance under various test conditions.



TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

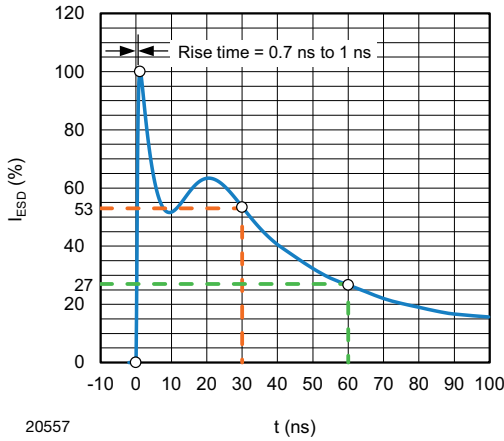


Fig. 1 - ESD Discharge Current Wave Form acc. IEC 61000-4-2 (330 Ω/150 pF)

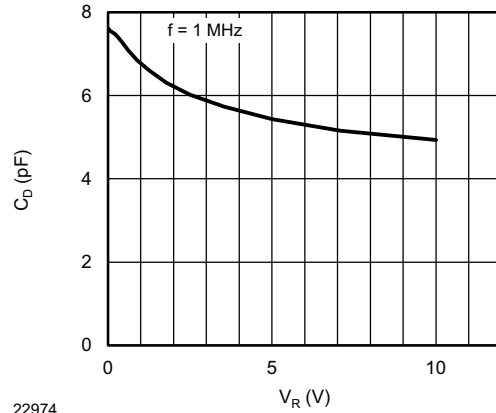


Fig. 4 - Typical Capacitance vs. Reverse Voltage

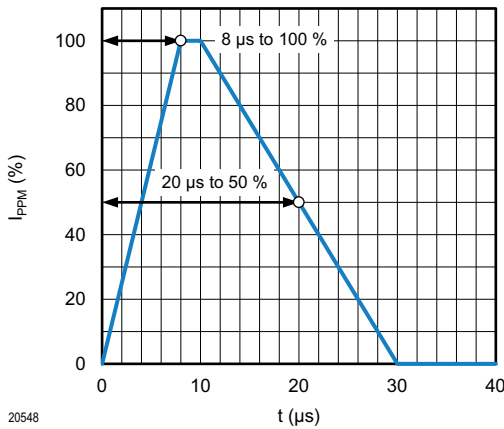


Fig. 2 - 8/20 μs Peak Pulse Current Wave Form acc. IEC 61000-4-5

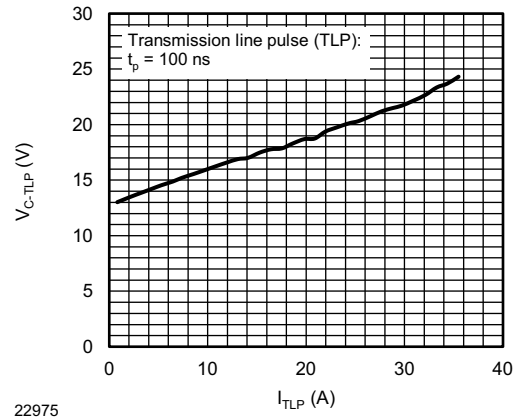


Fig. 5 - Typical Clamping Voltage vs. Peak Pulse Current

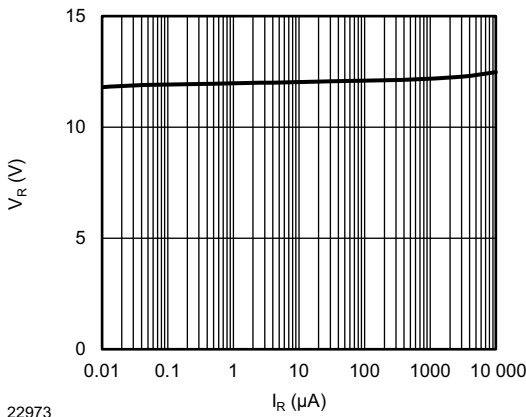


Fig. 3 - Typical Reverse Voltage vs. Reverse Current

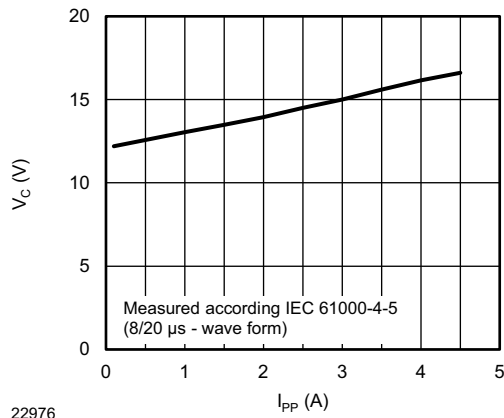
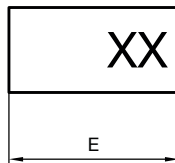
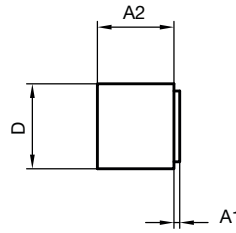
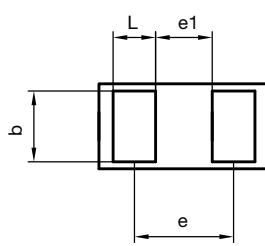


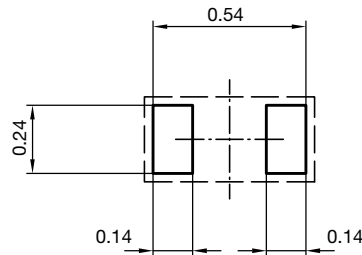
Fig. 6 - Typical Peak Clamping Voltage vs. Peak Pulse Current

**PACKAGE DIMENSIONS** in millimeters (mils): **CLP0603-2L Gen2**


	Millimeters			mils		
	min.	nom.	max.	min.	nom.	max.
A	0.25	0.28	0.30	9.84	11.02	11.81
A1	0.01	0.01	0.02	0.39	0.39	0.79
A2	0.24	0.27	0.28	9.45	10.63	11.02
b	0.22	0.25	0.28	8.66	9.84	11.02
D	0.27	0.30	0.33	10.62	11.81	12.99
E	0.57	0.60	0.63	22.44	23.62	24.80
e		0.40			15.75	
e1		0.25			9.84	
L	0.12	0.15	0.18	4.72	5.91	7.09

XX ... TYPE CODE AND ALSO PIN1 LOCATION

foot print recommendation:



Document no.: S8-V-3906.04-068 (4)  
 Created - Date: 14. July 2020  
 Rev. 1 - Date 03-June 2021

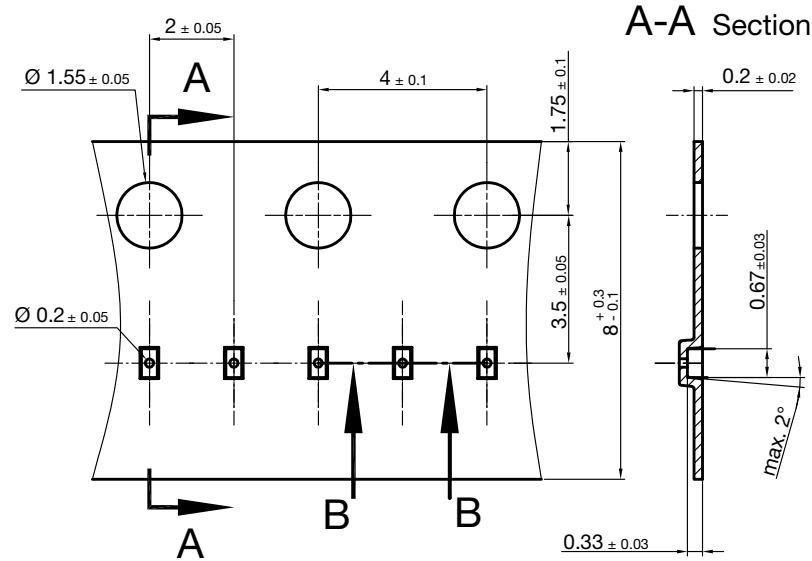
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**Footprint and soldering recommendation:**

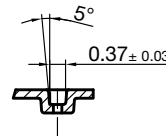
please see Application Note: [www.vishay.com/doc?85917](http://www.vishay.com/doc?85917)



**CARRIER TAPE** in millimeters: **CLP0603-2L**



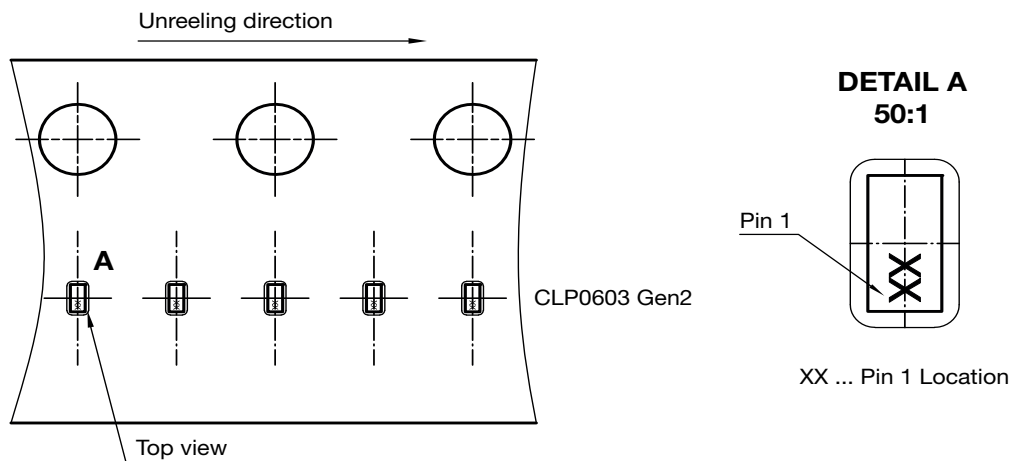
**B-B Section**



Cummulative tolerances of 10 sprocket holes is +/-0.2 mm

22591  
Document no. S8-V-3906.04-0025 (4)  
Created - Date: 22. Nov. 2010

### ORIENTATION IN CARRIER CLP0603-2L Gen2



Document no.: S8-V-3906.04-069 (4)  
Created - Date: 14-July-2020  
Rev. 1 - Date 23-January-2024

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