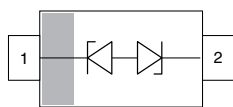
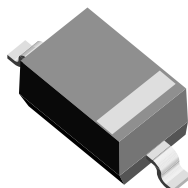


# Low Capacitance, Single-Line ESD Protection Diode in SOD-323



20503



22756 SOD-323

## MARKING (example only)



XYZ = type code (see table below)

bar = pin 1

## LINKS TO ADDITIONAL RESOURCES



## FEATURES

- For LIN-bus applications
- Small SOD-323 package
- 1-line ESD protection
- Working range:  $\pm 16$  V
- Low leakage current  $I_R < 0.05 \mu A$
- Low load capacitance  $C_D < 24$  pF
- ESD protection acc. IEC 61000-4-2  
 $\pm 30$  kV contact discharge  
 $\pm 30$  kV air discharge
- ESD capability according to AEC-Q101:  
human body model: class H3B:  $> 8$  kV
- e3 - pins plated with tin (Sn)
- AEC-Q101 qualified available
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## ORDERING INFORMATION

PART NUMBER (EXAMPLE)	ENVIRONMENTAL AND QUALITY CODE				PACKAGING CODE		ORDERING CODE (EXAMPLE)
	AEC-Q101 QUALIFIED	RoHS-COMPLIANT + LEAD (Pb)-FREE TERMINATIONS		TIN PLATED	3K PER 7" REEL (8 mm TAPE) 15K/BOX = MOQ	10K PER 13" REEL (8 mm TAPE) 10K/BOX = MOQ	
		STANDARD	GREEN				
VLIN1616-02G	-	E	-	3	-08	-	VLIN1616-02G-E3-08
VLIN1616-02G	H	E	-	3	-08	-	VLIN1616-02GHE3-08
VLIN1616-02G	-	E	-	3	-	-18	VLIN1616-02G-E3-18
VLIN1616-02G	H	E	-	3	-	-18	VLIN1616-02GHE3-18

## PACKAGE DATA

DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VLIN1616-02G	SOD-323	161	4.30 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

## ABSOLUTE MAXIMUM RATINGS

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	$T_A = 25$ °C; acc. IEC 61000-4-5; $t_p = 8/20$ $\mu s$ ; single shot	$I_{PPM}$	6	A
Peak pulse power	$T_A = 25$ °C; acc. IEC 61000-4-5; $t_p = 8/20$ $\mu s$ ; single shot	$P_{PP}$	200	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses; $T_A = 25$ °C	$V_{ESD}$	$\pm 30$	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses; $T_A = 25$ °C		$\pm 30$	kV
Operating temperature	Junction temperature	$T_J$	-55 to +150	°C
Storage temperature		$T_{STG}$	-55 to +150	°C

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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	$V_{RWM}$	-	-	16	V
Reverse voltage	At $I_R = 0.05\text{ }\mu\text{A}$	$V_R$	16	-	-	V
Reverse current	At $V_{RWM} = 16\text{ V}$	$I_R$	-	-	0.05	$\mu\text{A}$
Reverse breakdown voltage	At $I_R = 1\text{ mA}$	$V_{BR}$	17.1	18.6	20	V
Reverse clamping voltage	At $I_{PP} = 1\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$	$V_C$	-	22	25	V
	At $I_{PP} = I_{PPM} = 6\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$	$V_C$	-	29	33	V
Capacitance	At $V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_D$	-	18	24	pF

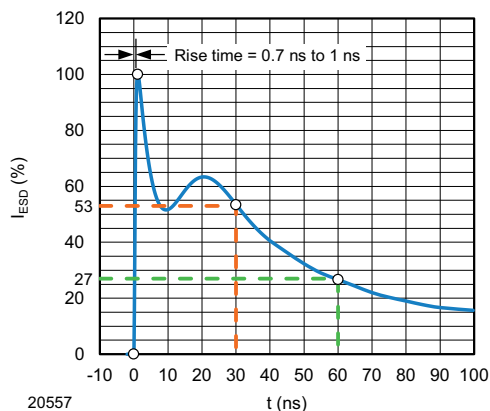
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

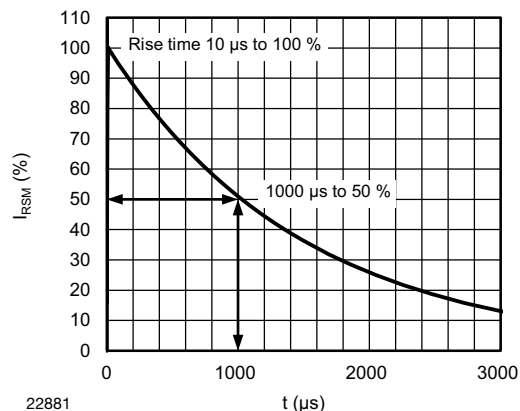


Fig. 3 - 10/1000  $\mu\text{s}$  Peak Pulse Current Wave Form

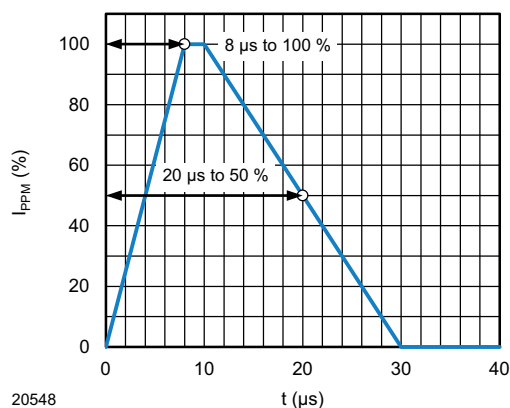


Fig. 2 - 8/20  $\mu\text{s}$  Peak Pulse Current Wave Form  
acc. IEC 61000-4-5

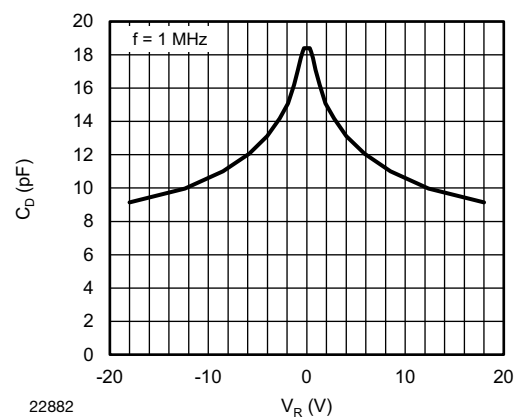
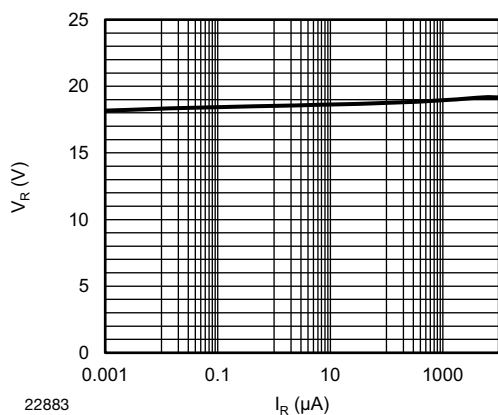
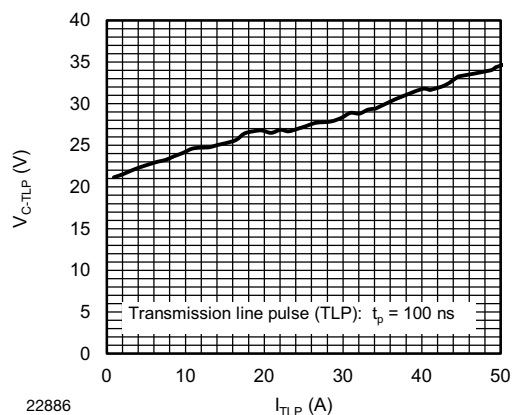
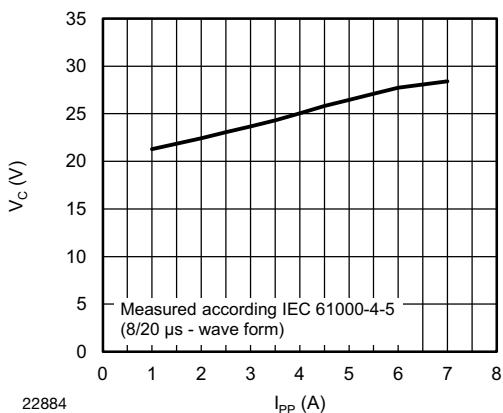
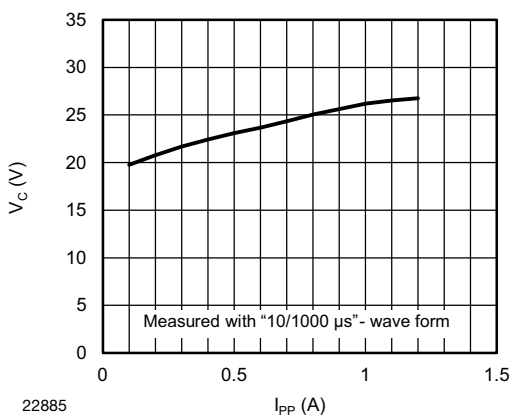
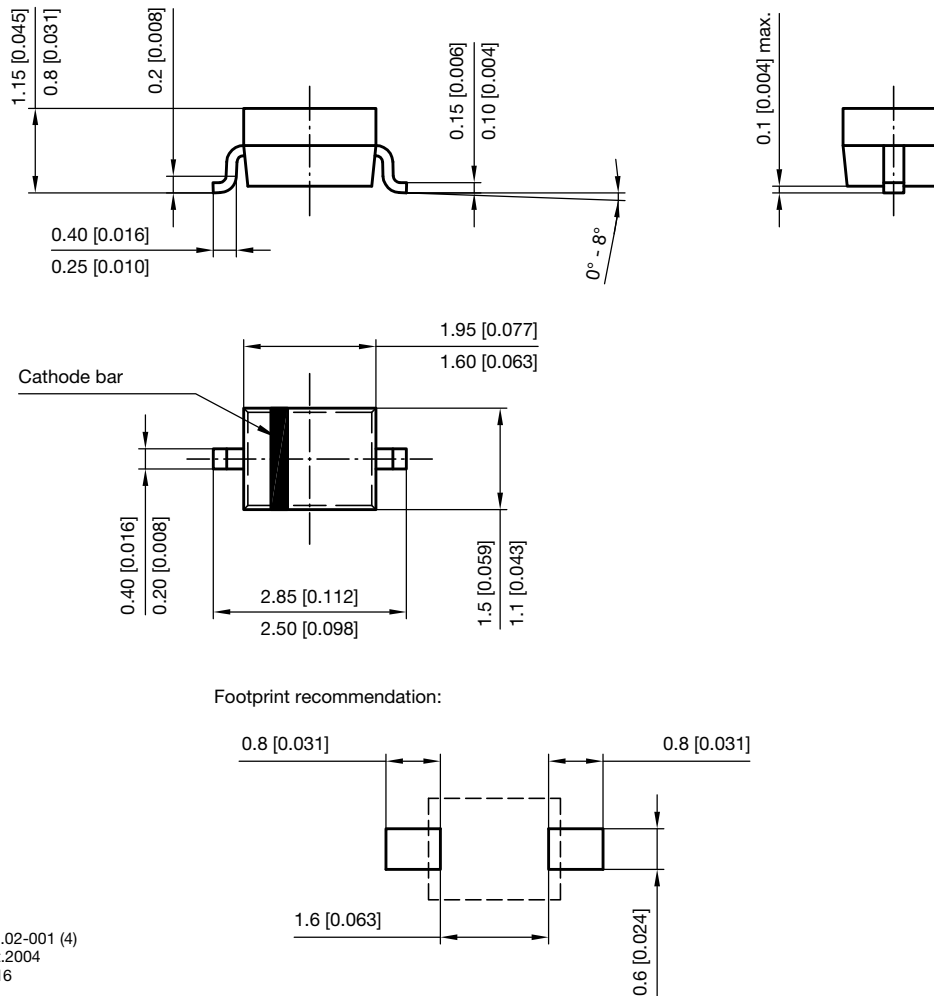


Fig. 4 - Typical Capacitance  $C_D$  vs. Reverse Voltage  $V_R$

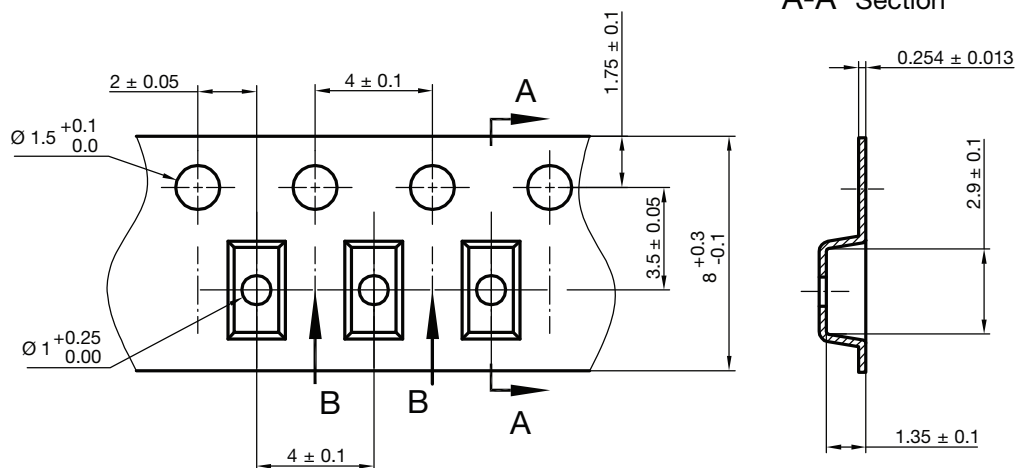

Fig. 5 - Typical Reverse Voltage  $V_R$  vs. Reverse Current  $I_R$ 

Fig. 8 - Typical Clamping Voltage  $V_{C-TLP}$  vs. Pulse Current  $I_{TLP}$ 

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

Fig. 7 - Typical Peak Clamping Voltage vs. Peak Pulse Current (10/1000  $\mu s$ )



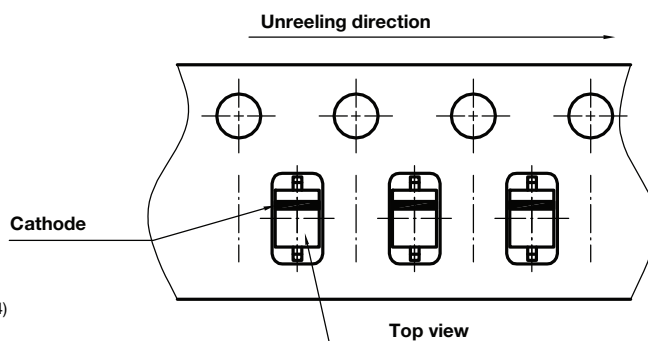
**PACKAGE DIMENSIONS** in millimeters (inches) **SOD-323**



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**CARRIER TAPE SOD-323**


Document no.: S8-V-3717.07-002 (4)  
Created - Date: 09. Feb. 2010  
22824

**ORIENTATION IN CARRIER TAPE SOD-323**


Document no.: S8-V-3717.07-003 (4)  
Created - Date: 09. Feb. 2010  
22772



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