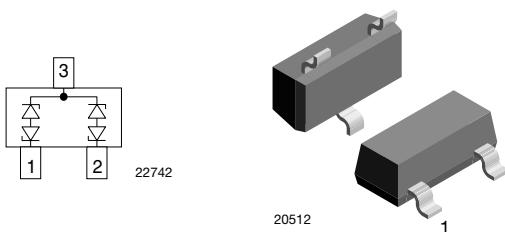
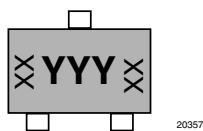


## Bidirectional Symmetrical (BiSy) Low Capacitance, Dual-Line ESD Protection Diode in SOT-23



### MARKING (example only)



YYY = type code (see table below)

XX = date code

### FEATURES

- For CAN and FLEX-bus applications
- Small SOT-23 package
- 2-line ESD protection
- Working range  $\pm 36$  V
- Low leakage current  $I_R < 0.05$   $\mu$ A
- Low load capacitance  $C_D < 10$  pF
- ESD immunity 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

### LINKS TO ADDITIONAL RESOURCES



### 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)	10K PER 13" REEL (8 mm TAPE)	
		STANDARD	GREEN		15K/BOX = MOQ	10K/BOX = MOQ	
VCAN36A2-03S	-	E		3	-08		VCAN36A2-03S-E3-08
VCAN36A2-03S	H	E		3	-08		VCAN36A2-03SHE3-08
VCAN36A2-03S	-	E		3		-18	VCAN36A2-03S-E3-18
VCAN36A2-03S	H	E		3		-18	VCAN36A2-03SHE3-18

### PACKAGE DATA

DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VCAN36A2-03S	SOT-23	36A	5.65 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	$I_{PPM}$	2.4	A
Peak pulse power	$T_A = 25$ °C; pin 1 or 2 to pin 3; acc. IEC 61000-4-5; $t_p = 8/20$ $\mu$ s; single shot	$P_{PP}$	150	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

**ELECTRICAL CHARACTERISTICS** (pin 1 to 3, 3 to 1, 2 to 3, or 3 to 2)  
 $(T_{amb} = 25 \text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	$N_{channel}$	-	-	2	lines
Reverse stand-off voltage	Max. reverse working voltage	$V_{RWM}$	-	-	36	V
Reverse voltage	At $I_R = 0.05 \mu\text{A}$	$V_R$	36	-	-	V
Reverse current	At $V_{RWM} = 36 \text{ V}$	$I_R$	-	-	0.05	$\mu\text{A}$
Reverse breakdown voltage	At $I_R = 1 \text{ mA}$	$V_{BR}$	39	42	45	V
Reverse clamping voltage	At $I_{PP} = 1 \text{ A}$ ; $t_p = 8/20 \mu\text{s}$	$V_C$	-	48	54	V
	At $I_{PP} = I_{PPM} = 2.4 \text{ A}$ ; $t_p = 8/20 \mu\text{s}$	$V_C$	-	55	63	V
Capacitance	At $V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$	$C_D$	-	8	10	pF

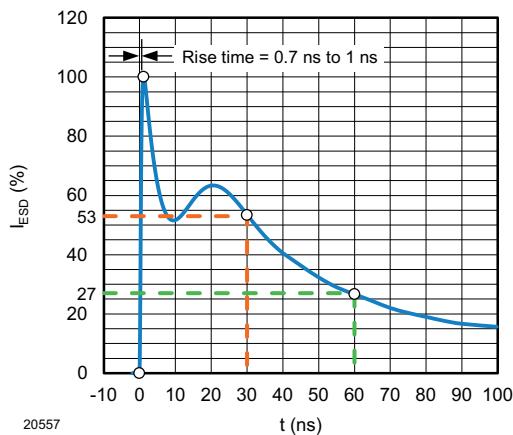
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25 \text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

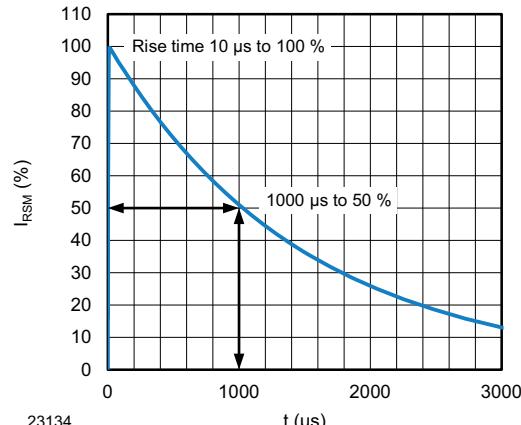


Fig. 3 - 10/1000  $\mu\text{s}$  Peak Pulse Current Wave Form

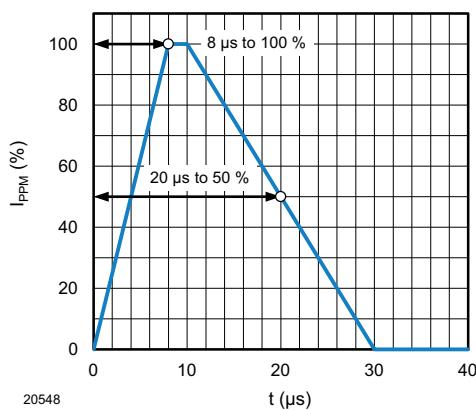


Fig. 2 - 8/20  $\mu\text{s}$  Peak Pulse Current Wave Form  
acc. IEC 61000-4-5

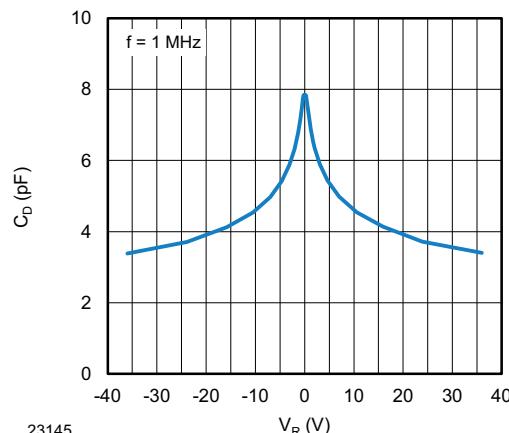


Fig. 4 - Typical Capacitance  $C_D$  vs. Reverse Voltage  $V_R$

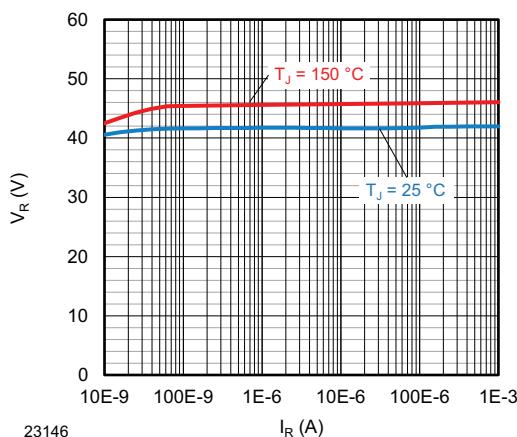


Fig. 5 - Typical Reverse Voltage  $V_R$  vs. Reverse Current  $I_R$

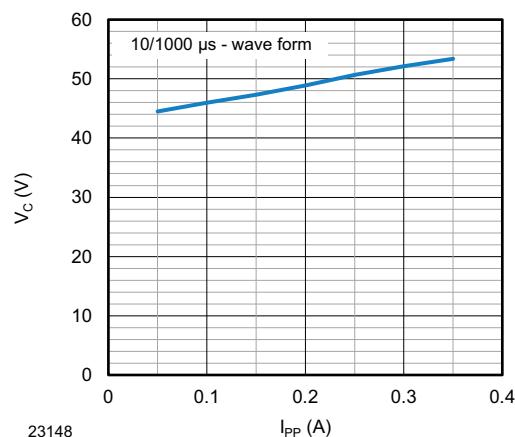


Fig. 7 - Typical Peak Clamping Voltage  $V_{C-TLP}$  vs. Peak Pulse Current  $I_{TLP}$

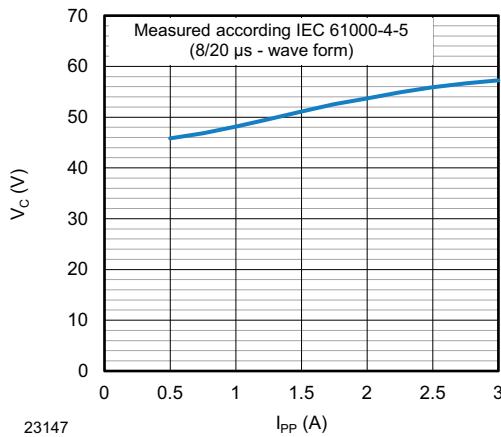


Fig. 6 - Typical Peak Clamping Voltage  $V_C$  vs. Peak Pulse Current  $I_{PP}$

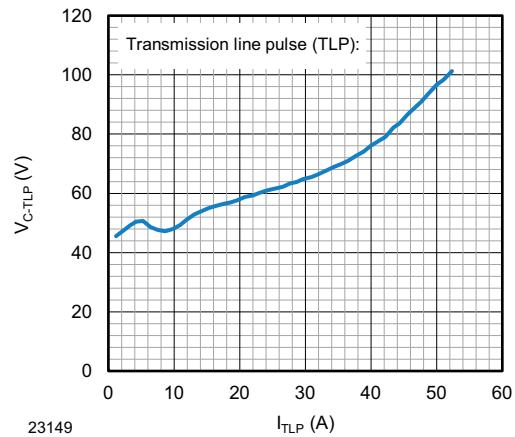
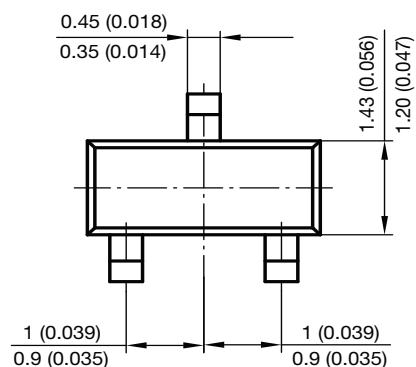
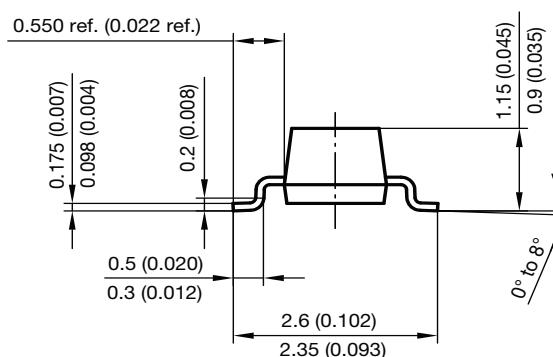
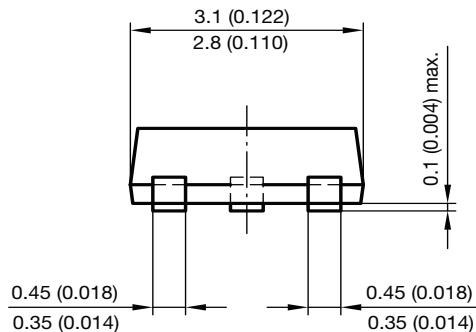
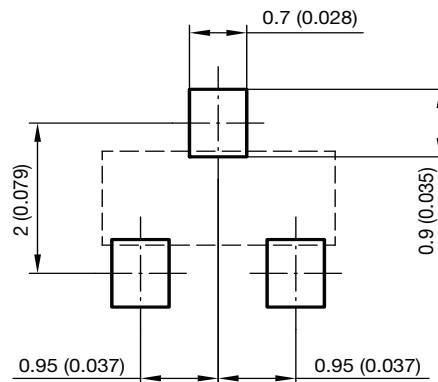
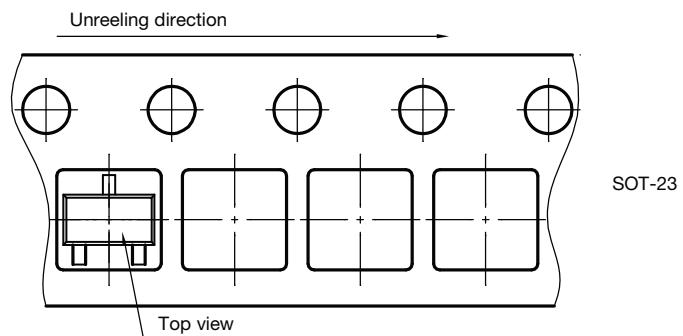


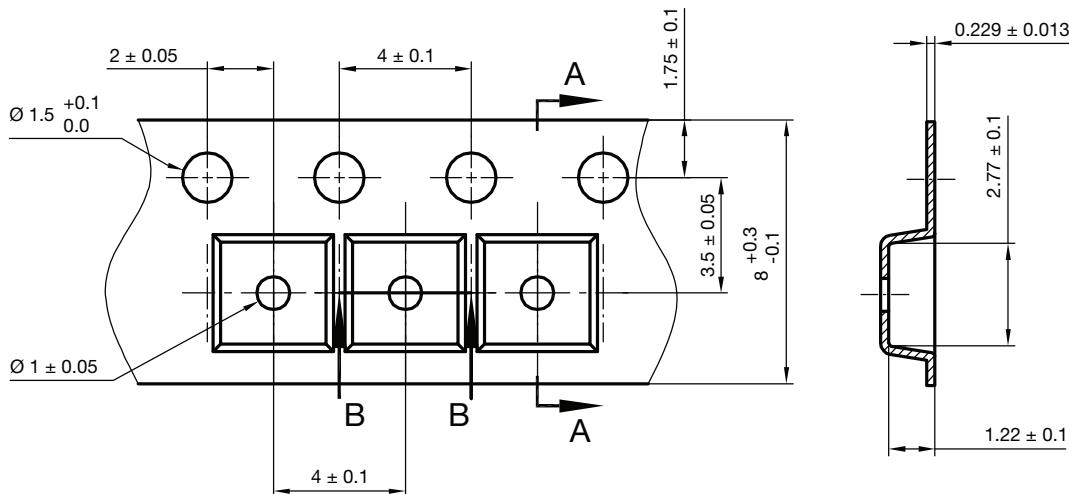
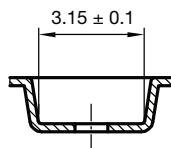
Fig. 8 - Typical Clamping Voltage  $V_{C-TLP}$  vs. Peak Pulse Current  $I_{TLP}$

**PACKAGE DIMENSIONS** in millimeters (inches) **SOT-23**

**Foot print recommendation:**


Document no.: 6.541-5014.01-4  
 Rev. 8 - Date: 23. Sep. 2009  
 17418

**ORIENTATION IN CARRIER TAPE SOT-23**


Orientation in carrier tape  
 SOT-23  
 S8-V-3929.01-006 (4)  
 04.02.2010  
 22607

**CARRIER TAPE SOT-23**
**A-A Section**

**B-B Section**


Carrier tape SOT-23  
 Document no.: S8-V-3929.01-005 (4)  
 Created - Date: 04. Feb. 2010  
 22856

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