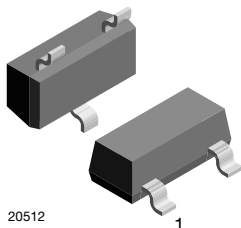
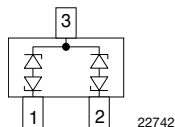
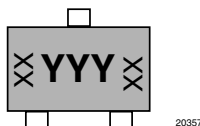


# Bidirectional Symmetrical (BiSy) Low Capacitance, Dual-Line ESD Protection Diode in SOT-23



## 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)

## LINKS TO ADDITIONAL RESOURCES



3D Models

## ORDERING INFORMATION

| PART NUMBER<br>(EXAMPLE) | ENVIRONMENTAL AND QUALITY CODE |                                                    |               | REVISION | PACKAGING CODE                                    |                                                     | ORDERING CODE<br>(EXAMPLE) |
|--------------------------|--------------------------------|----------------------------------------------------|---------------|----------|---------------------------------------------------|-----------------------------------------------------|----------------------------|
|                          | AEC-Q101<br>QUALIFIED          | RoHS-COMPLIANT<br>+ LEAD (Pb)-FREE<br>TERMINATIONS | TIN<br>PLATED |          | 3K PER<br>7" REEL<br>(8 mm TAPE)<br>15K/BOX = MOQ | 10K PER<br>13" REEL<br>(8 mm TAPE)<br>10K/BOX = MOQ |                            |
| VCAN36A2-03S             | -                              | E                                                  | 3             | -        | 08                                                |                                                     | VCAN36A2-03S-E3-08         |
| VCAN36A2-03S             | H                              | E                                                  | 3             | A        | 08                                                |                                                     | VCAN36A2-03SHE3A08         |
| VCAN36A2-03S             | -                              | E                                                  | 3             | -        |                                                   | 18                                                  | VCAN36A2-03S-E3-18         |
| VCAN36A2-03S             | H                              | E                                                  | 3             | A        |                                                   | 18                                                  | VCAN36A2-03SHE3A18         |

## PACKAGE DATA

| DEVICE NAME  | PACKAGE NAME | TYPE CODE | WEIGHT | MOLDING COMPOUND<br>FLAMMABILITY RATING | MOISTURE<br>SENSITIVITY LEVEL        | SOLDERING<br>CONDITIONS         |
|--------------|--------------|-----------|--------|-----------------------------------------|--------------------------------------|---------------------------------|
| VCAN36A2-03S | SOT-23       | 36A       | 9.2 mg | UL 94 V-0                               | MSL level 1<br>(according J-STD-020) | Peak temperature max.<br>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 $I_R = 0.05\text{ }\mu\text{A}$                                     | $V_R$         | 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 $I_{PP} = 1\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$             | $V_C$         | -    | 48   | 54   | V             |
|                           | At $I_{PP} = I_{PPM} = 2.4\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$ | $V_C$         | -    | 55   | 63   | V             |
| Capacitance               | At $V_R = 0\text{ V}$ , $f = 1\text{ MHz}$                             | $C_D$         | -    | 8    | 10   | pF            |

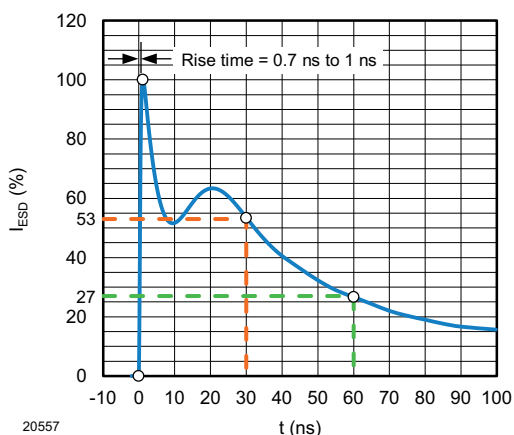
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

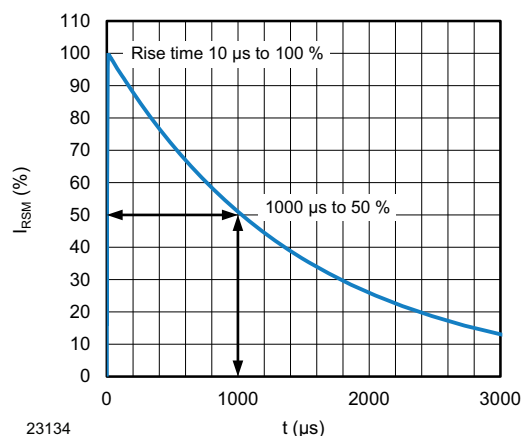


Fig. 3 - 10/1000  $\mu\text{s}$  Peak Pulse Current Wave Form

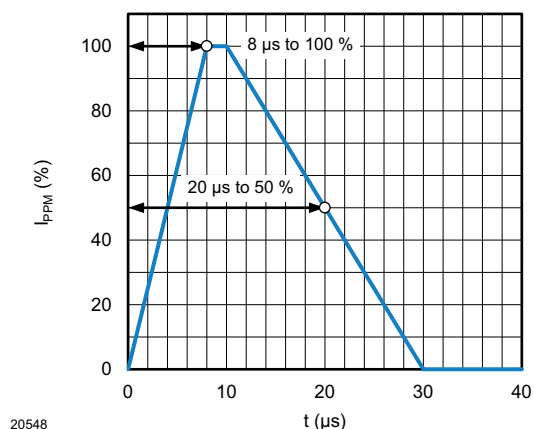


Fig. 2 - 8/20  $\mu\text{s}$  Peak Pulse Current Wave Form  
acc. IEC 61000-4-5

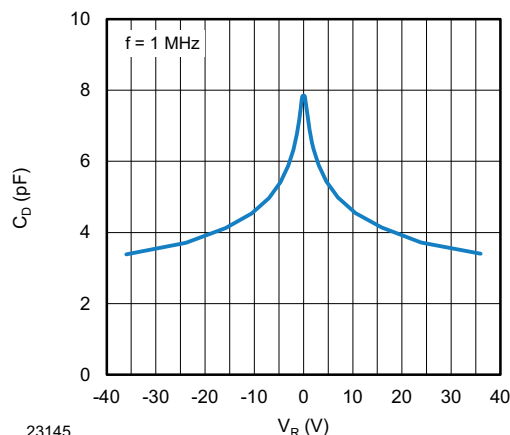
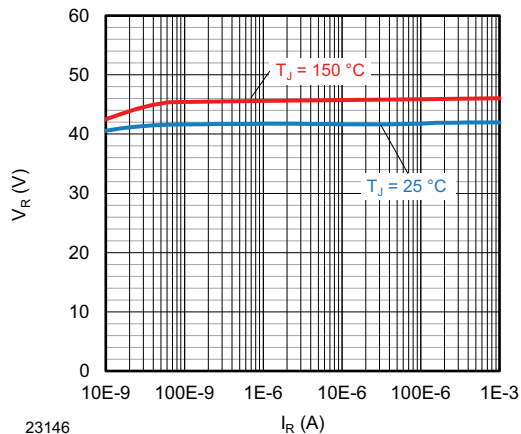
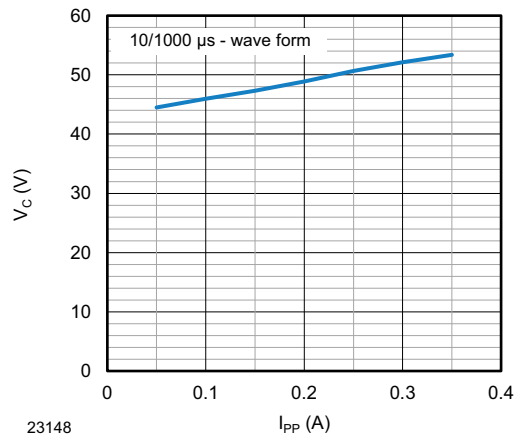
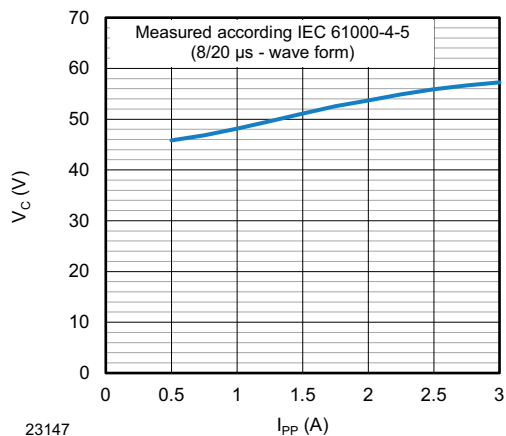
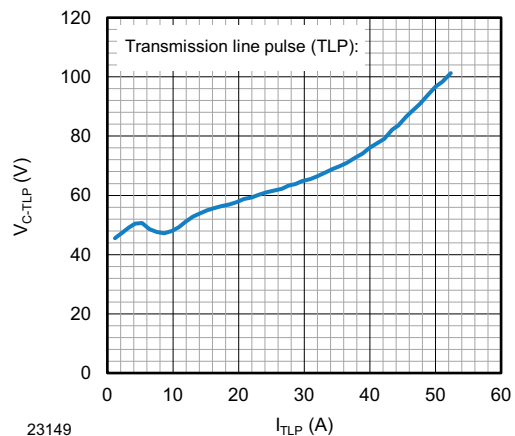
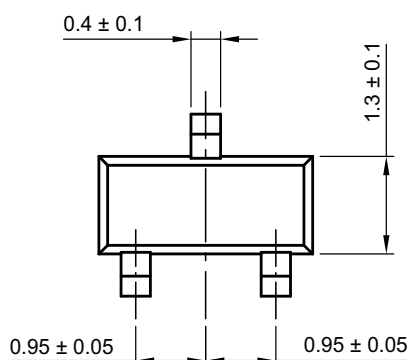
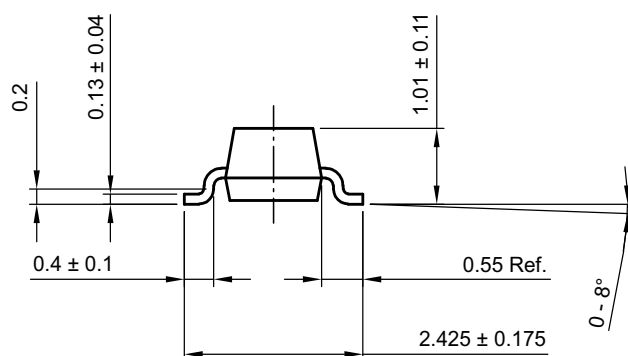
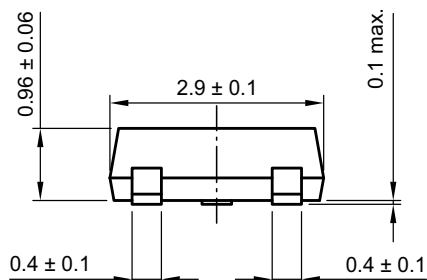
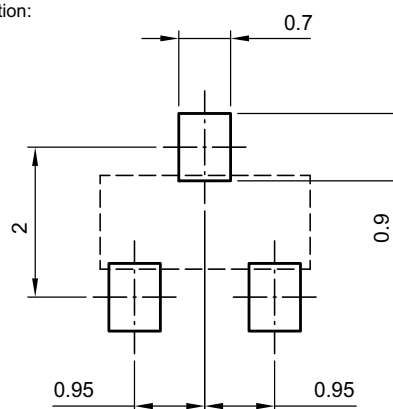


Fig. 4 - Typical Capacitance  $C_D$  vs. Reverse Voltage  $V_R$


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  $I_{TLP}$

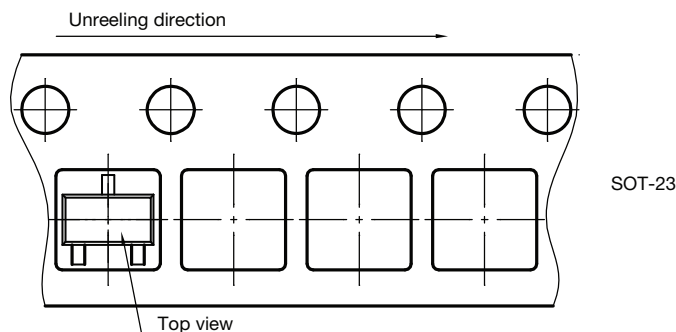
**PACKAGE DIMENSIONS** in millimeters (inches) **SOT-23**


footprint recommendation:



Document no.: S8-V-3929.01-009 (4)  
Created - Date: 18 Oct. 2021  
Rev. 01 - Date: 18 Jan. 2022

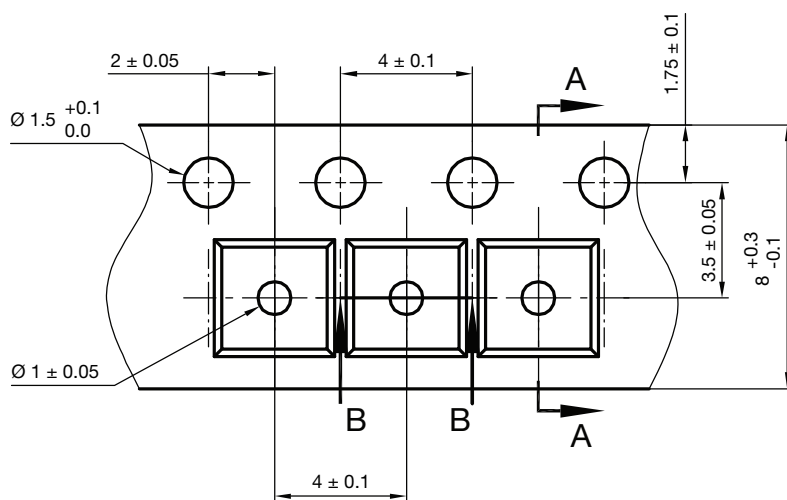
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**ORIENTATION IN CARRIER TAPE SOT-23**


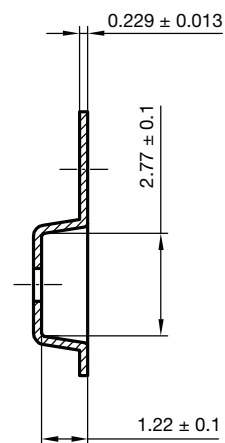
Orientation in carrier tape  
SOT-23  
S8-V-3929.01-006 (4)  
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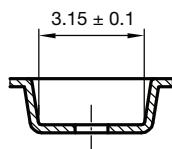
CARRIER TAPE SOT-23



A-A Section



B-B Section



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