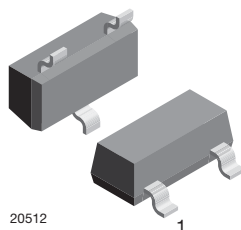
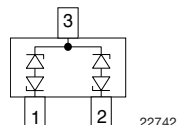
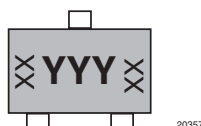


# Bidirectional Symmetrical (BiSy) Low Capacitance, Dual-Line ESD Protection Diode in SOT-23


**RoHS**  
COMPLIANT

## MARKING (example only)



YYY = type code (see table below)  
XX = date code

## FEATURES

- For CAN and FLEX-Bus applications
- Small SOT-23 package
- AEC-Q101 qualified available
- 2-line ESD protection
- Working range  $\pm 26.5$  V
- Low leakage current  $I_R < 0.05$   $\mu$ A
- Low load capacitance  $C_D < 13$  pF
- ESD immunity acc. IEC 61000-4-2  
 $\pm 30$  kV contact discharge  
 $\pm 30$  kV air discharge
- e3 - pins plated with tin (Sn)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

## DESIGN SUPPORT TOOLS AVAILABLE



## ORDERING INFORMATION

| PART<br>NUMBER<br>(EXAMPLE) | ENVIRONMENTAL AND QUALITY CODE |                                                 |       |               | PACKAGING CODE                                 |                                                  | ORDERING CODE<br>(EXAMPLE) |
|-----------------------------|--------------------------------|-------------------------------------------------|-------|---------------|------------------------------------------------|--------------------------------------------------|----------------------------|
|                             | AEC-Q101<br>QUALIFIED          | RoHS-COMPLIANT + LEAD<br>(Pb)-FREE TERMINATIONS |       | TIN<br>PLATED | 3K PER 7" REEL<br>(8 mm TAPE)<br>15K/BOX = MOQ | 10K PER 13" REEL<br>(8 mm TAPE)<br>10K/BOX = MOQ |                            |
|                             |                                | STANDARD                                        | GREEN |               |                                                |                                                  |                            |
| VCAN26A2-03S                | -                              | E                                               |       | 3             | -08                                            |                                                  | VCAN26A2-03S-E3-08         |
| VCAN26A2-03S                | H                              | E                                               |       | 3             | -08                                            |                                                  | VCAN26A2-03SHE3-08         |
| VCAN26A2-03S                | -                              | E                                               |       | 3             |                                                | -18                                              | VCAN26A2-03S-E3-18         |
| VCAN26A2-03S                | H                              | E                                               |       | 3             |                                                | -18                                              | VCAN26A2-03SHE3-18         |

## PACKAGE DATA

| DEVICE NAME  | PACKAGE NAME | TYPE CODE | WEIGHT | MOLDING COMPOUND<br>FLAMMABILITY RATING | MOISTURE<br>SENSITIVITY LEVEL        | SOLDERING<br>CONDITIONS         |
|--------------|--------------|-----------|--------|-----------------------------------------|--------------------------------------|---------------------------------|
| VCAN26A2-03S | SOT-23       | 6A2       | 8.8 mg | UL 94 V-0                               | MSL level 1<br>(according J-STD-020) | Peak temperature<br>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                      | $I_{PPM}$ | 3           | 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                                                                                                                         | $V_{RWM}$     | -    | -    | 26.5 | V             |
| Reverse voltage           | At $I_R = 0.05\text{ }\mu\text{A}$                                                                                                                   | $V_R$         | 26.5 | -    | -    | V             |
| Reverse current           | At $V_{RWM} = 26.5\text{ V}$                                                                                                                         | $I_R$         | -    | -    | 0.05 | $\mu\text{A}$ |
| Reverse breakdown voltage | At $I_R = 1\text{ mA}$                                                                                                                               | $V_{BR}$      | 28   | 30   | 32   | V             |
| Reverse clamping voltage  | At $I_{PP} = 1\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$                                                                                           | $V_C$         | -    | 33   | 40   | V             |
|                           | At $I_{PP} = I_{PPM} = 3\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$                                                                                 | $V_C$         | -    | 39   | 50   | V             |
| Capacitance               | At $V_R = 0\text{ V}$ , $f = 1\text{ MHz}$                                                                                                           | $C_D$         | -    | 10   | 13   | pF            |
|                           | Diode capacitance matching at $V_R = 0\text{ V}$ ,<br>$T_J = -40\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$ / $C_{D13}$ vs. $C_{D23}$ | $C_D$         | -    | -    | 1.5  | pF            |

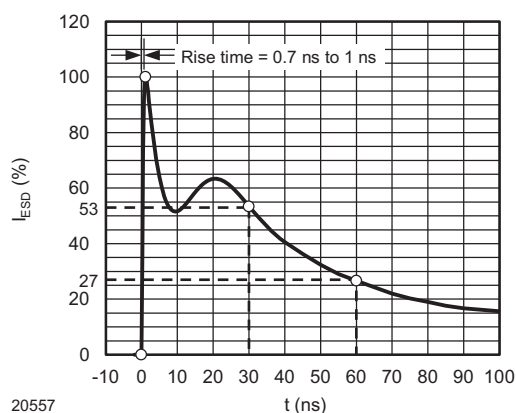
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

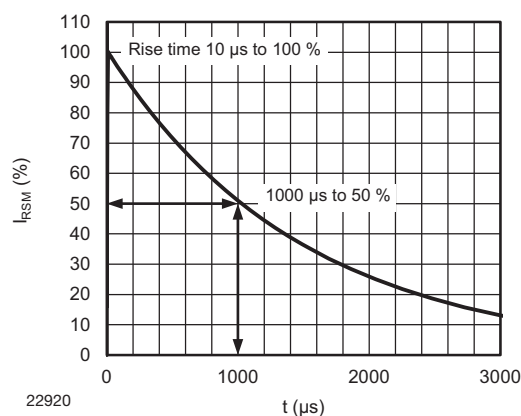


Fig. 3 - 10/1000 $\mu\text{s}$  Peak Pulse Current Wave Form

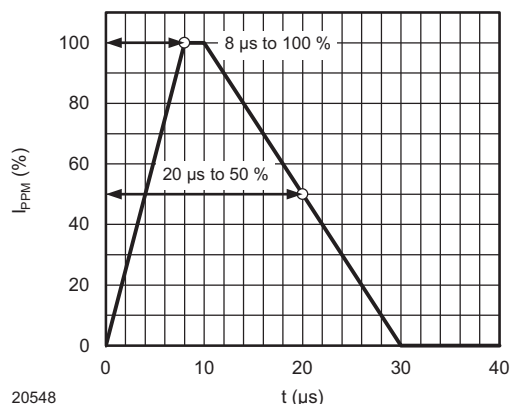


Fig. 2 - 8/20  $\mu\text{s}$  Peak Pulse Current Wave Form  
acc. IEC 61000-4-5

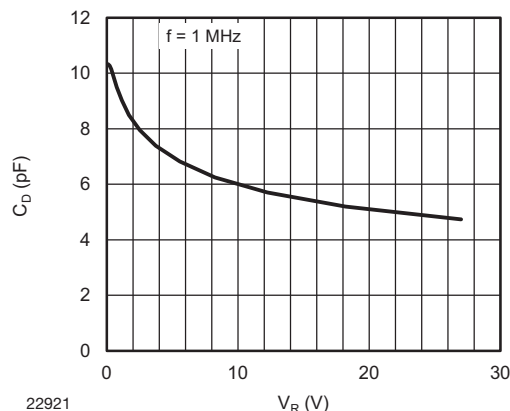


Fig. 4 - Typical Capacitance vs. Reverse Voltage

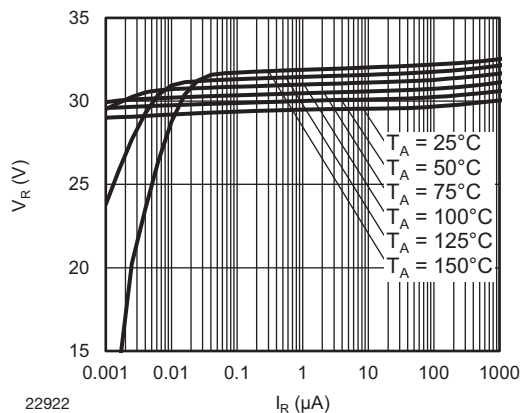


Fig. 5 - Typical Reverse Voltage vs. Reverse Current

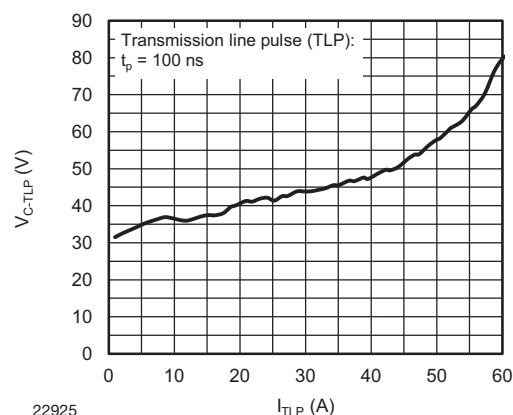


Fig. 8 - Typical Clamping Voltage vs. Peak Pulse Current

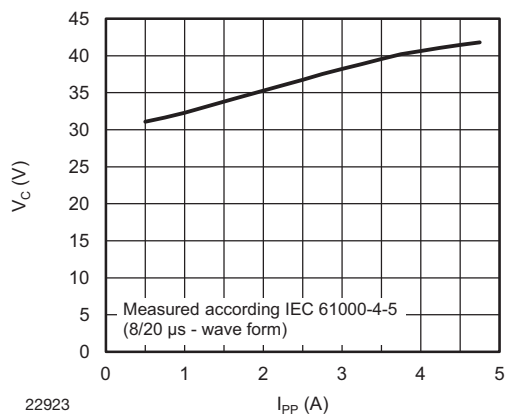


Fig. 6 - Typical Peak Clamping Voltage vs. Peak Pulse Current

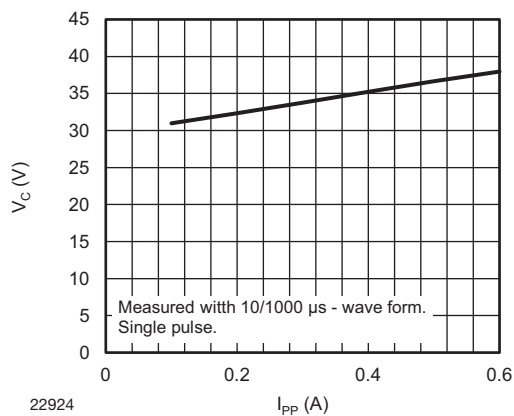
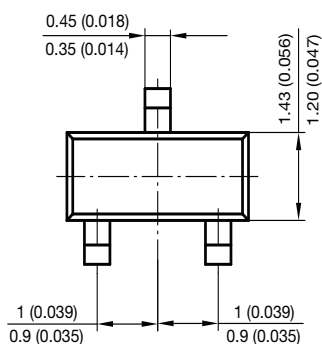
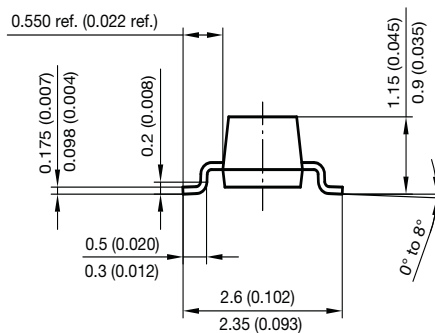
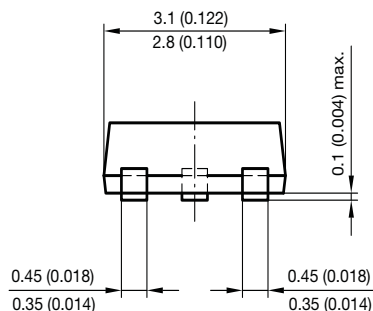


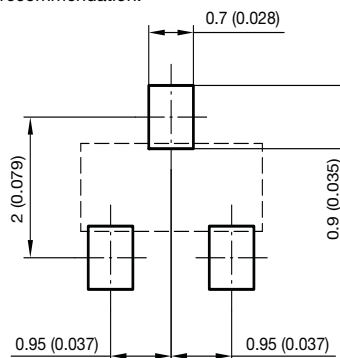
Fig. 7 - Typical Peak Clamping Voltage vs. Peak Pulse Current



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

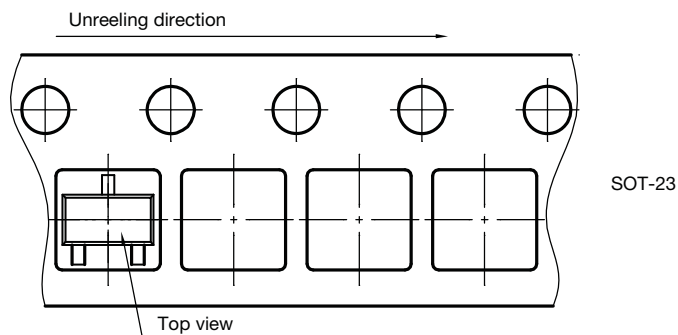


Foot print recommendation:



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

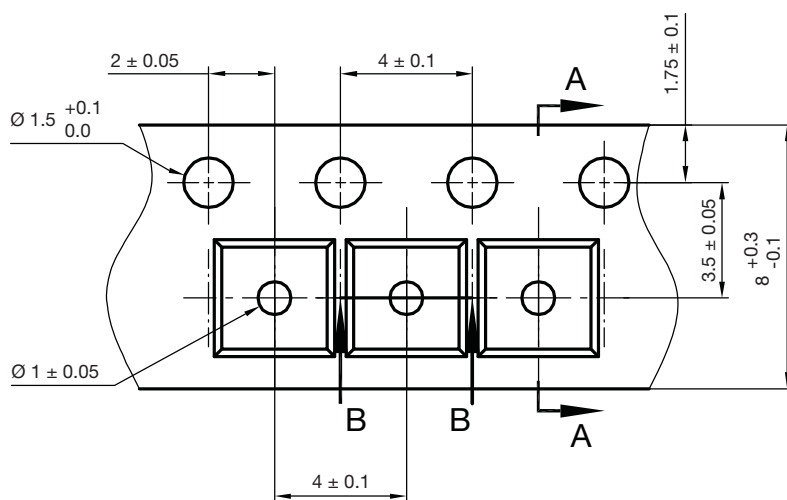
**ORIENTATION IN CARRIER TAPE SOT-23**



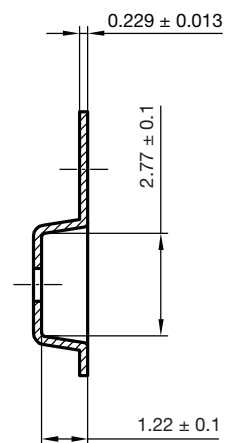
Orientation in carrier tape  
SOT-23  
S8-V-3929.01-006 (4)  
04.02.2010  
22607



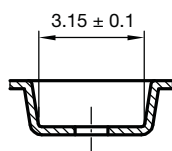
CARRIER TAPE SOT-23



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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Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)