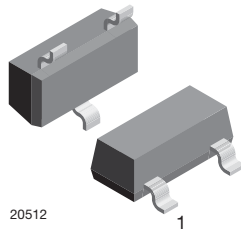
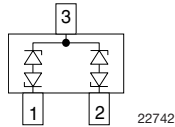
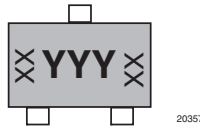


Bidirectional Symmetrical (BiSy) Low Capacitance, Dual-Line ESD Protection Diode in SOT-23


MARKING (example only)


YYY = type code (see table below)

XX = date code

DESIGN SUPPORT TOOLS AVAILABLE

FEATURES

- For CAN applications
- Small SOT-23 package
- 2-line ESD protection
- Working range ± 16 V
- Low leakage current $I_R < 0.05 \mu\text{A}$
- Low load capacitance $C_D < 18.5 \text{ pF}$
- ESD immunity acc. IEC 61000-4-2
 ± 30 kV contact discharge
 ± 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

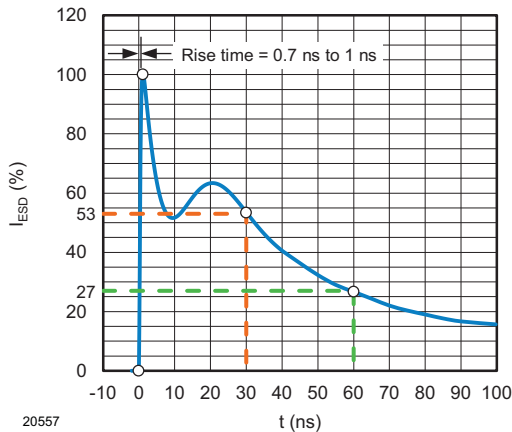
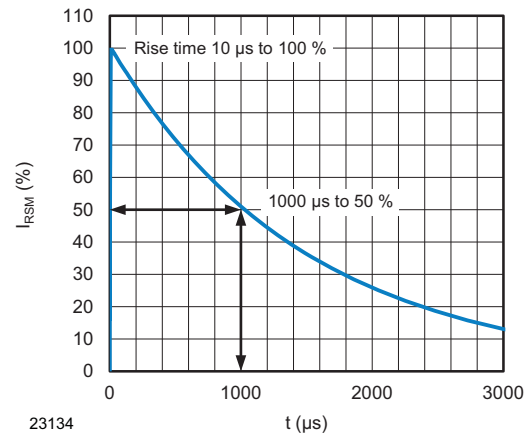
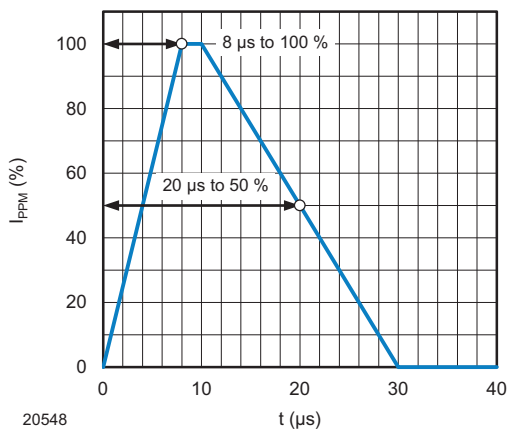
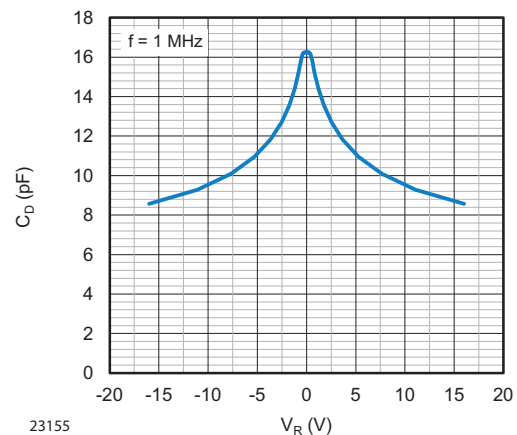

RoHS
COMPLIANT

| 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) | 10K PER 13" REEL (8 mm TAPE) | |
| | | STANDARD | GREEN | | 15K/BOX = MOQ | 10K/BOX = MOQ | |
| VCAN16A2-03S | - | E | - | 3 | -08 | - | VCAN16A2-03S-E3-08 |
| VCAN16A2-03S | H | E | - | 3 | -08 | - | VCAN16A2-03SHE3-08 |
| VCAN16A2-03S | - | E | - | 3 | - | -18 | VCAN16A2-03S-E3-18 |
| VCAN16A2-03S | H | E | - | 3 | - | -18 | VCAN16A2-03SHE3-18 |

| PACKAGE DATA | | | | | | |
|--------------|--------------|-----------|--------|-----------------------------------------|--------------------------------------|---------------------------------|
| DEVICE NAME | PACKAGE NAME | TYPE CODE | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL | SOLDERING CONDITIONS |
| VCAN16A2-03S | SOT-23 | 16A | 8.8 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 | $T_A = 25 \text{ °C}$, acc. IEC 61000-4-5; $t_p = 8/20 \mu\text{s}$; single shot | | I_{PPM} | 5 | A |
| Peak pulse power | $T_A = 25 \text{ °C}$; pin 1 or 2 to pin 3; acc. IEC 61000-4-5; $t_p = 8/20 \mu\text{s}$; single shot | | P_{PP} | 145 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses, $T_A = 25 \text{ °C}$ | | V_{ESD} | ± 30 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses, $T_A = 25 \text{ °C}$ | | | ± 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} | - | - | 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 | μA |
| 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 | - | 20 | 23 | V |
| | At $I_{PP} = I_{PPM} = 5.2\text{ A}$; $t_p = 8/20\text{ }\mu\text{s}$ | V_C | - | 25 | 28 | V |
| Capacitance | At $V_R = 0\text{ V}$, $f = 1\text{ MHz}$ | C_D | 15 | 16.7 | 18.5 | pF |
| | Diode capacitance matching at $V_R = 0\text{ V}$, $T_J = -40\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$ / C_{D13} vs. C_{D23} | C_D | - | - | 1 | 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 Ω / 150 pF)

 Fig. 3 - 10/1000 μs Peak Pulse Current Wave Form

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

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

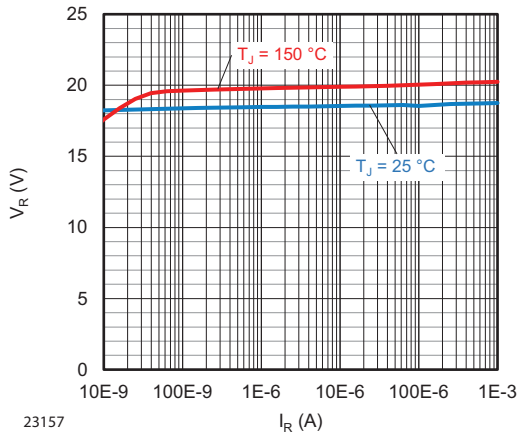


Fig. 5 - Typical Reverse Voltage V_R vs. Reverse Current I_R

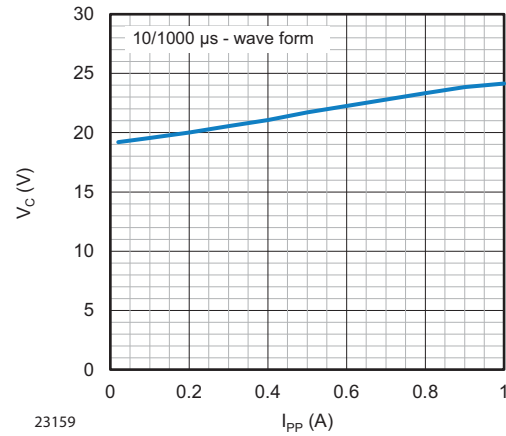


Fig. 7 - Typical Peak Clamping Voltage V_{C-TLP} vs. Peak Pulse Current I_{TLP}

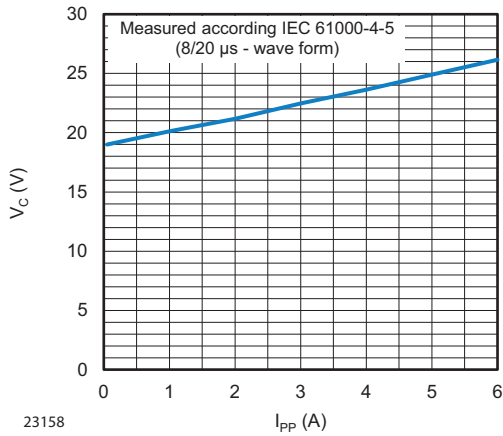


Fig. 6 - Typical Peak Clamping Voltage V_C vs. Peak Pulse Current I_{PP}

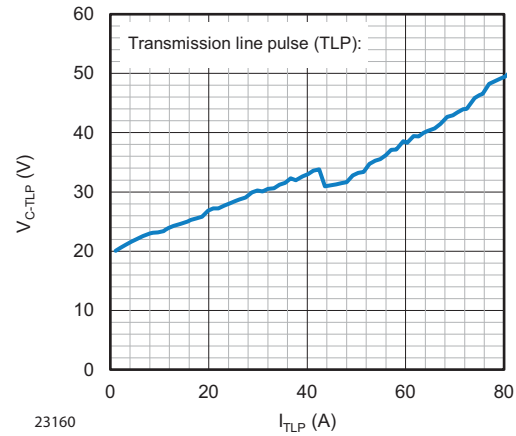
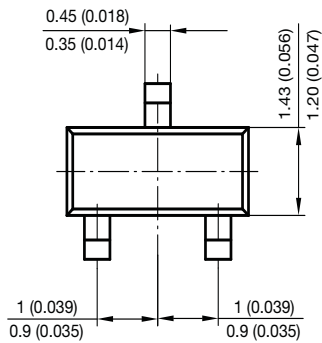
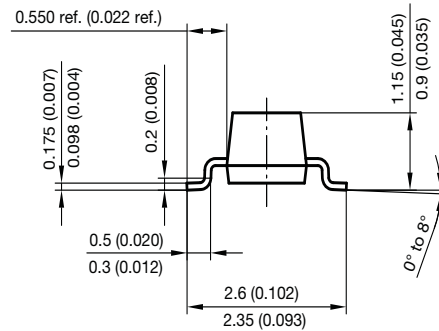
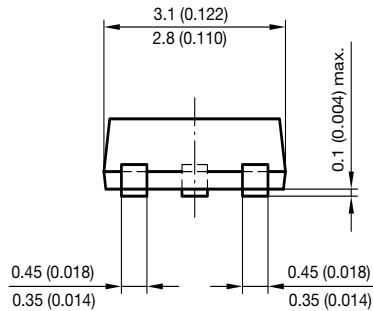


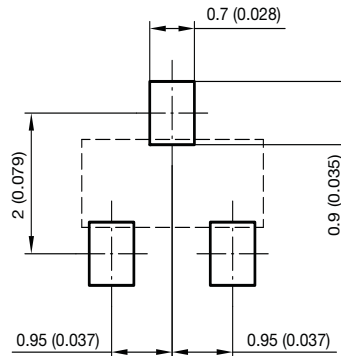
Fig. 8 - Typical Clamping Voltage V_{C-TLP} vs. Pulse Current I_{TLP}



PACKAGE DIMENSIONS in millimeters (inches) SOT-23

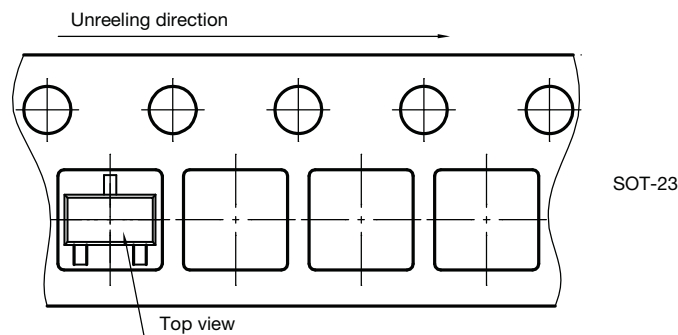


Foot print recommendation:



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

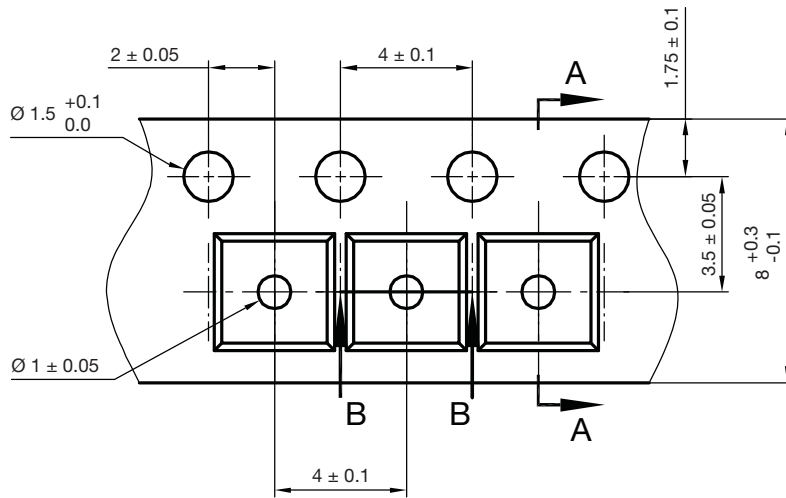
ORIENTATION IN CARRIER TAPE SOT-23



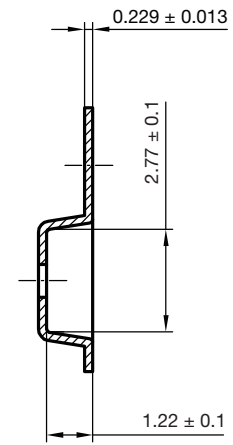
Orientation in carrier tape
SOT-23
S8-V-3929.01-006 (4)
04.02.2010
22607



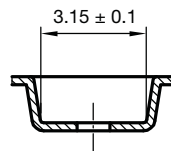
CARRIER TAPE SOT-23



A-A Section



B-B Section



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



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.