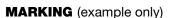


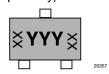
Bidirectional Symmetrical (BiSy) Low Capacitance, Dual-Line ESD Protection Diode in SOT-23



FEATURES

- For CAN and FLEX-bus applications
- Small SOT-23 package
- 2-line ESD protection
- Working range ± 36 V
- Low leakage current I_R < 0.05 μA
- Low load capacitance C_D < 10 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 <u>www.vishay.com/doc?99912</u>





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

LINKS TO ADDITIONAL RESOURCES



| ORDERING INFORMATION | | | | | | | | |
|--------------------------|--------------------------------|--|-------|---------------|-------------------------------|---------------------------------|----------------------------|--|
| PART NUMBER (EXAMPLE) | ENVIRONMENTAL AND QUALITY CODE | | | | PACKAG | ING CODE | | |
| | 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) | ORDERING CODE (EXAMPLE) | |
| | QUALIFIED | STANDARD | GREEN | PLATED | 15K/BOX = MOQ | 10K/BOX = MOQ | <u> </u> | |
| VCAN36A2-03S | - | E | | 3 | -08 | | VCAN36A2-03S-E3-08 | |
| VCAN36A2-03S | Н | Е | | 3 | -08 | | VCAN36A2-03SHE3-08 | |
| VCAN36A2-03S | = | Е | | 3 | | -18 | VCAN36A2-03S-E3-18 | |
| VCAN36A2-03S | Н | Е | | 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 μ s; single shot | I_{PPM} | 2.4 | Α | | |
| Peak pulse power | T_A = 25 °C; pin 1 or 2 to pin 3; acc. IEC 61000-4-5; t_p = 8/20 μ s; single shot | P_{PP} | 150 | W | | |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses, T_A = 25 °C | V | ± 30 | kV | | |
| | Air discharge acc. IEC 61000-4-2; 10 pulses, T _A = 25 °C | V_{ESD} | ± 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 °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 μA | V _R | 36 | - | - | V | | |
| Reverse current | At V _{RWM} = 36 V | I _R | = | - | 0.05 | μΑ | | |
| Reverse breakdown voltage | At I _R = 1 mA | V_{BR} | 39 | 42 | 45 | V | | |
| Reverse clamping voltage | At I _{PP} 1 A; t _p = 8/20 μs | 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 $V_R = 0 V$, $f = 1 MHz$ | C _D | - | 8 | 10 | pF | | |

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

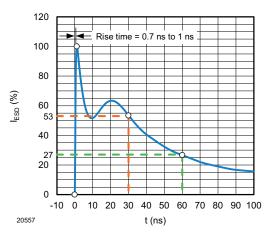


Fig. 1 - ESD Discharge Current Wave Form acc. IEC 61000-4-2 (330 Ω / 150 pF)

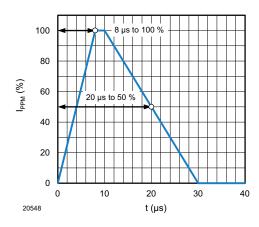


Fig. 2 - 8/20 µs Peak Pulse Current Wave Form acc. IEC 61000-4-5

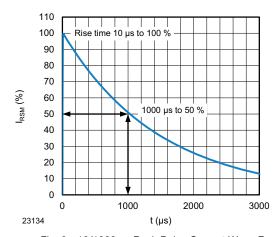


Fig. 3 - $10/1000 \, \mu s$ Peak Pulse Current Wave Form

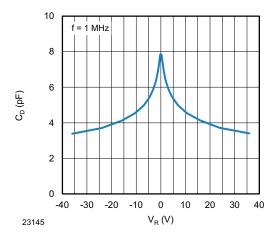


Fig. 4 - Typical Capacitance C_D vs. Reverse Voltage V_R

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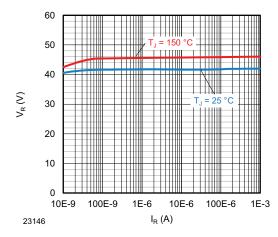


Fig. 5 - Typical Reverse Voltage V_R vs. Reverse Current I_R

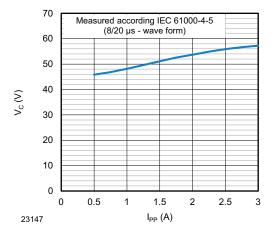


Fig. 6 - Typical Peak Clamping Voltage C_D vs. Peak Pulse Current I_{PP}

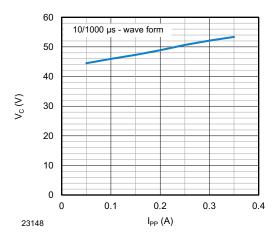


Fig. 7 - Typical Peak Clamping Voltage V_{C-TLP} vs. Peak Pulse Current I_{TLP}

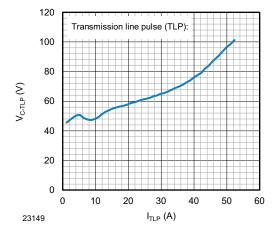
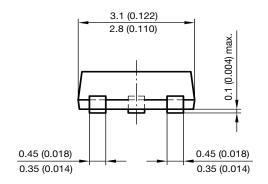
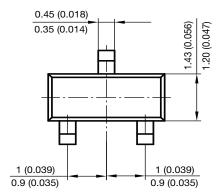


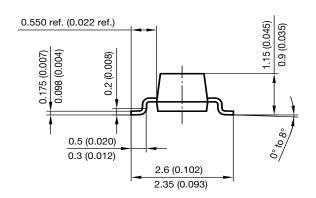
Fig. 8 - Typical Clamping Voltage $V_{C\text{-}TLP}$ vs. Peak Pulse Current I_{TLP}

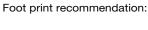
PACKAGE DIMENSIONS in millimeters (inches) SOT-23

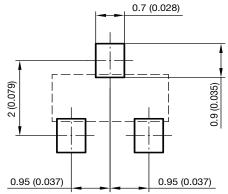




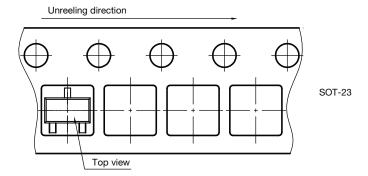
Document no.: 6.541-5014.01-4 Rev. 8 - Date: 23. Sep. 2009







ORIENTATION IN CARRIER TAPE SOT-23

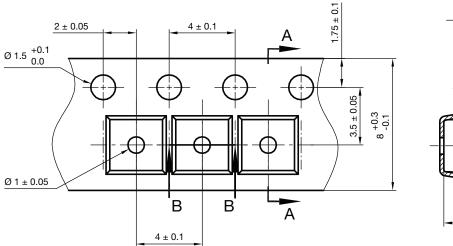


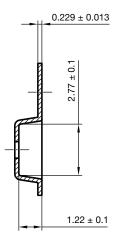
Orientation in carrier tape SOT-23 S8-V-3929.01-006 (4) 04.02.2010 22607



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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