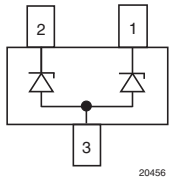
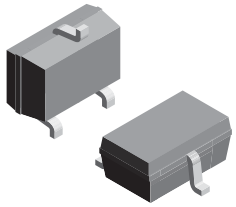
## Dual-Line ESD-Protection Diode Array in SOT-323




SOT-323

### FEATURES

- Compact SOT-323 package
- 2-line unidirectional ESD-protection
- AEC-Q101 qualified available
- Working range 1 V to 33 V
- ESD immunity acc. IEC 61000-4-2
  ±15 kV to ±30 kV contact discharge
  ±15 kV to ±30 kV air discharge
- Lead plating: Sn (e3)
  - soldering can be checked by standard vision inspection
  - AOI = Automated Optical Inspection
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

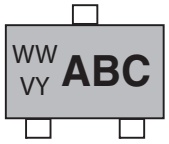
Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

### MARKING (example only)




ABC = type code (see table below)
WW = date code working week
VY = date code year

### DESIGN SUPPORT TOOLS AVAILABLE

3D Models

### ORDERING INFORMATION

| PART NUMBER (EXAMPLE) | AEC-Q101 QUALIFIED | ENVIRONMENTAL AND QUALITY CODE | | | ORDERING CODE (EXAMPLE) |
|---|---|---|---|---|---|
| | | RoHS COMPLIANT + LEAD (Pb)-FREE TERMINATIONS | TIN PLATED | 8K PER 7" REEL (8 mm TAPE) | |
| | | GREEN | | MOQ = 8K/BOX | |
| VESD05A2-03G | - | G | 3 | -08 | VESD05A2-03G-G3-08 |
| VESD05A2-03G | H | G | 3 | -08 | VESD05A2-03GHG3-08 |

### PACKAGE DATA

| DEVICE NAME | PACKAGE NAME | TYPE CODE | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL | SOLDERING CONDITIONS |
|---|---|---|---|---|---|---|
| VESD01A2-03G-G3 | SOT-323 | D01 | 5.2 mg | UL 94 V-0 | MSL level 1 (according J-STD-020) | Peak temperature max. 260 °C |
| VESD03A2-03G-G3 | | D03 | | | | |
| VESD05A2-03G-G3 | | D05 | | | | |
| VESD08A2-03G-G3 | | D08 | | | | |
| VESD12A2-03G-G3 | | D12 | | | | |
| VESD16A2-03G-G3 | | D16 | | | | |
| VESD26A2-03G-G3 | | D26 | | | | |
| VESD33A2-03G-G3 | | D33 | | | | |



For technical questions, contact: ESDprotection@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

| **ABSOLUTE MAXIMUM RATINGS** VESD01A2-03G ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **VALUE** | **UNIT** |
| Peak pulse current | Acc. IEC 61000-4-5, 8/20 µs/single shot | $I_{PPM}$ | 14.6 | A |
| Peak pulse power | Acc. IEC 61000-4-5, 8/20 µs/single shot | $P_{PP}$ | 100 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses | $V_{ESD}$ | 30 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses | | 30 | kV |
| Operating temperature | Junction temperature | $T_J$ | -55 to +150 | °C |
| Storage temperature | | $T_{stg}$ | -55 to +150 | °C |

| **ABSOLUTE MAXIMUM RATINGS** VESD03A2-03G ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **VALUE** | **UNIT** |
| Peak pulse current | Acc. IEC 61000-4-5, 8/20 µs/single shot | $I_{PPM}$ | 11.6 | A |
| Peak pulse power | Acc. IEC 61000-4-5, 8/20 µs/single shot | $P_{PP}$ | 100 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses | $V_{ESD}$ | 30 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses | | 30 | kV |
| Operating temperature | Junction temperature | $T_J$ | -55 to +150 | °C |
| Storage temperature | | $T_{stg}$ | -55 to +150 | °C |

| **ABSOLUTE MAXIMUM RATINGS** VESD05A2-03G ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **VALUE** | **UNIT** |
| Peak pulse current | Acc. IEC 61000-4-5, 8/20 µs/single shot | $I_{PPM}$ | 8.7 | A |
| Peak pulse power | Acc. IEC 61000-4-5, 8/20 µs/single shot | $P_{PP}$ | 100 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses | $V_{ESD}$ | 30 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses | | 30 | kV |
| Operating temperature | Junction temperature | $T_J$ | -55 to +150 | °C |
| Storage temperature | | $T_{stg}$ | -55 to +150 | °C |

| **ABSOLUTE MAXIMUM RATINGS** VESD08A2-03G ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **VALUE** | **UNIT** |
| Peak pulse current | Acc. IEC 61000-4-5, 8/20 µs/single shot | $I_{PPM}$ | 6.60 | A |
| Peak pulse power | Acc. IEC 61000-4-5, 8/20 µs/single shot | $P_{PP}$ | 100 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses | $V_{ESD}$ | 30 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses | | 30 | kV |
| Operating temperature | Junction temperature | $T_J$ | -55 to +150 | °C |
| Storage temperature | | $T_{stg}$ | -55 to +150 | °C |


For technical questions, contact: ESDprotection@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

| **ABSOLUTE MAXIMUM RATINGS** VESD12A2-03G ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **VALUE** | **UNIT** |
| Peak pulse current | Acc. IEC 61000-4-5, 8/20 µs/single shot | $I_{PPM}$ | 4.4 | A |
| Peak pulse power | Acc. IEC 61000-4-5, 8/20 µs/single shot | $P_{PP}$ | 100 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses | $V_{ESD}$ | 30 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses | | 30 | kV |
| Operating temperature | Junction temperature | $T_J$ | -55 to +150 | °C |
| Storage temperature | | $T_{stg}$ | -55 to +150 | °C |

| **ABSOLUTE MAXIMUM RATINGS** VESD16A2-03G ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **VALUE** | **UNIT** |
| Peak pulse current | Acc. IEC 61000-4-5, 8/20 µs/single shot | $I_{PPM}$ | 3.6 | A |
| Peak pulse power | Acc. IEC 61000-4-5, 8/20 µs/single shot | $P_{PP}$ | 100 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses | $V_{ESD}$ | 30 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses | | 30 | kV |
| Operating temperature | Junction temperature | $T_J$ | -55 to +150 | °C |
| Storage temperature | | $T_{stg}$ | -55 to +150 | °C |

| **ABSOLUTE MAXIMUM RATINGS** VESD26A2-03G ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **VALUE** | **UNIT** |
| Peak pulse current | Acc. IEC 61000-4-5, 8/20 µs/single shot | $I_{PPM}$ | 2.1 | A |
| Peak pulse power | Acc. IEC 61000-4-5, 8/20 µs/single shot | $P_{PP}$ | 100 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses | $V_{ESD}$ | 20 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses | | 20 | kV |
| Operating temperature | Junction temperature | $T_J$ | -55 to +150 | °C |
| Storage temperature | | $T_{stg}$ | -55 to +150 | °C |

| **ABSOLUTE MAXIMUM RATINGS** VESD33A2-03G ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **VALUE** | **UNIT** |
| Peak pulse current | Acc. IEC 61000-4-5, 8/20 µs/single shot | $I_{PPM}$ | 1.6 | A |
| Peak pulse power | Acc. IEC 61000-4-5, 8/20 µs/single shot | $P_{PP}$ | 100 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses | $V_{ESD}$ | 15 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses | | 15 | kV |
| Operating temperature | Junction temperature | $T_J$ | -55 to +150 | °C |
| Storage temperature | | $T_{stg}$ | -55 to +150 | °C |


For technical questions, contact: ESDprotection@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

**ELECTRICAL CHARACTERISTICS** VESD01A2-03G
($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITIONS/REMARKS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Protection paths | Number of lines which can be protected | $N_{channel}$ | - | - | 1 | lines |
| Reverse stand off voltage | Max. reverse working voltage | $V_{RWM}$ | - | - | 1 | V |
| Reverse voltage | at $I_R$ = 100 µA | $V_R$ | 1 | 1.2 | - | V |
| Reverse current | at $V_R$ = 1 V | $I_R$ | - | 20 | 100 | µA |
| Reverse breakdown voltage | at $I_R$ = 20 mA | $V_{BR}$ | 2.5 | 2.65 | 2.8 | V |
| Reverse clamping voltage | at $I_{PP} = I_{PPM}$ = 14.6 A, $t_p$ = 8/20 µs | $V_C$ | - | 6.2 | 6.9 | V |
| Forward clamping voltage | at $I_{PP}$ = 1 A, $t_p$ = 300 µs | $V_F$ | 0.9 | 1.1 | 1.2 | V |
| | at $I_{PP} = I_{PPM}$ = 14.6 A, $t_p$ = 8/20 µs | $V_F$ | - | 3 | 3.92 | V |
| Dynamic resistance | $t_p$ = 100 ns (TLP; pin 2-1) | $r_{dyn}$ | - | 0.13 | - | Ω |
| Capacitance | at $V_R$ = 0 V; f = 1 MHz | $C_D$ | 153 | 192 | 230 | pF |

**ELECTRICAL CHARACTERISTICS** VESD03A2-03G
($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITIONS/REMARKS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Protection paths | Number of lines which can be protected | $N_{channel}$ | - | - | 1 | lines |
| Reverse stand off voltage | Max. reverse working voltage | $V_{RWM}$ | - | - | 3 | V |
| Reverse voltage | at $I_R$ = 20 µA | $V_R$ | 3 | - | - | V |
| Reverse current | at $V_R$ = 3 V | $I_R$ | - | 8 | 20 | µA |
| Reverse breakdown voltage | at $I_R$ = 1 mA | $V_{BR}$ | 4.4 | 4.65 | 4.9 | V |
| Reverse clamping voltage | at $I_{PP} = I_{PPM}$ = 11.6 A, $t_p$ = 8/20 µs | $V_C$ | - | 7.8 | 8.70 | V |
| Forward clamping voltage | at $I_{PP}$ = 1 A, $t_p$ = 300 µs | $V_F$ | 0.9 | 1.1 | 1.2 | V |
| | at $I_{PP} = I_{PPM}$ = 11.6 A, $t_p$ = 8/20 µs | $V_F$ | - | 2.6 | 3.32 | V |
| Dynamic resistance | $t_p$ = 100 ns (TLP; pin 2-1) | $r_{dyn}$ | - | 0.19 | - | Ω |
| Capacitance | at $V_R$ = 0 V; f = 1 MHz | $C_D$ | 89 | 112 | 135 | pF |

**ELECTRICAL CHARACTERISTICS** VESD05A2-03G
($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITIONS/REMARKS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Protection paths | Number of lines which can be protected | $N_{channel}$ | - | - | 1 | lines |
| Reverse stand off voltage | Max. reverse working voltage | $V_{RWM}$ | - | - | 5 | V |
| Reverse voltage | at $I_R$ = 1 µA | $V_R$ | 5 | - | - | V |
| Reverse current | at $V_R$ = 5 V | $I_R$ | - | 0.01 | 0.1 | µA |
| Reverse breakdown voltage | at $I_R$ = 1 mA | $V_{BR}$ | 6.85 | 7.26 | 7.65 | V |
| Reverse clamping voltage | at $I_{PP} = I_{PPM}$ = 8.7 A, $t_p$ = 8/20 µs | $V_C$ | - | 10.3 | 11.5 | V |
| Forward clamping voltage | at $I_{PP}$ = 1 A, $t_p$ = 300 µs | $V_F$ | 0.9 | 1.1 | 1.2 | V |
| | at $I_{PP} = I_{PPM}$ = 8.7 A, $t_p$ = 8/20 µs | $V_F$ | - | 2.2 | 2.74 | V |
| Dynamic resistance | $t_p$ = 100 ns (TLP; pin 2-1) | $r_{dyn}$ | - | 0.2 | - | Ω |
| Capacitance | at $V_R$ = 0 V; f = 1 MHz | $C_D$ | 53 | 67 | 81 | pF |


For technical questions, contact: ESDprotection@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

**ELECTRICAL CHARACTERISTICS** VESD08A2-03G
($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITIONS/REMARKS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Protection paths | Number of lines which can be protected | $N_{channel}$ | - | - | 1 | lines |
| Reverse stand off voltage | Max. reverse working voltage | $V_{RWM}$ | - | - | 8 | V |
| Reverse voltage | at $I_R$ = 0.1 µA | $V_R$ | 8 | - | - | V |
| Reverse current | at $V_R$ = 8 V | $I_R$ | - | 0.01 | 0.1 | µA |
| Reverse breakdown voltage | at $I_R$ = 1 mA | $V_{BR}$ | 9.5 | 10 | 10.5 | V |
| Reverse clamping voltage | at $I_{PP} = I_{PPM}$ = 6.6 A, $t_p$ = 8/20 µs | $V_C$ | - | 13.7 | 15.3 | V |
| Forward clamping voltage | at $I_{PP}$ = 1 A, $t_p$ = 300 µs | $V_F$ | 0.9 | 1.1 | 1.2 | V |
| | at $I_{PP} = I_{PPM}$ = 6.6 A, $t_p$ = 8/20 µs | $V_F$ | - | 1.9 | 2.32 | V |
| Dynamic resistance | $t_p$ = 100 ns (TLP; pin 2-1) | $r_{dyn}$ | - | 0.23 | - | Ω |
| Capacitance | at $V_R$ = 0 V; f = 1 MHz | $C_D$ | 37 | 47 | 57 | pF |

**ELECTRICAL CHARACTERISTICS** VESD12A2-03G
($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITIONS/REMARKS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Protection paths | Number of lines which can be protected | $N_{channel}$ | - | - | 1 | lines |
| Reverse stand off voltage | Max. reverse working voltage | $V_{RWM}$ | - | - | 12 | V |
| Reverse voltage | at $I_R$ = 0.1 µA | $V_R$ | 12 | - | - | V |
| Reverse current | at $V_R$ = 12 V | $I_R$ | - | 0.01 | 0.1 | µA |
| Reverse breakdown voltage | at $I_R$ = 1 mA | $V_{BR}$ | 13.9 | 14.7 | 15.5 | V |
| Reverse clamping voltage | at $I_{PP} = I_{PPM}$ = 4.4 A, $t_p$ = 8/20 µs | $V_C$ | - | 20.5 | 22.7 | V |
| Forward clamping voltage | at $I_{PP}$ = 1 A, $t_p$ = 300 µs | $V_F$ | 0.9 | 1.1 | 1.2 | V |
| | at $I_{PP} = I_{PPM}$ = 4.4 A, $t_p$ = 8/20 µs | $V_F$ | - | 1.6 | 1.88 | V |
| Dynamic resistance | $t_p$ = 100 ns (TLP; pin 2-1) | $r_{dyn}$ | - | 0.4 | - | Ω |
| Capacitance | at $V_R$ = 0 V; f = 1 MHz | $C_D$ | 26 | 33 | 40 | pF |

**ELECTRICAL CHARACTERISTICS** VESD16A2-03G
($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITIONS/REMARKS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Protection paths | Number of lines which can be protected | $N_{channel}$ | - | - | 1 | lines |
| Reverse stand off voltage | Max. reverse working voltage | $V_{RWM}$ | - | - | 16 | V |
| Reverse voltage | at $I_R$ = 0.1 µA | $V_R$ | 16 | - | - | V |
| Reverse current | at $V_R$ = 16 V | $I_R$ | - | 0.01 | 0.1 | µA |
| Reverse breakdown voltage | at $I_R$ = 1 mA | $V_{BR}$ | 17 | 17.9 | 18.8 | V |
| Reverse clamping voltage | at $I_{PP} = I_{PPM}$ = 3.6 A, $t_p$ = 8/20 µs | $V_C$ | - | 25.3 | 28 | V |
| Forward clamping voltage | at $I_{PP}$ = 1 A, $t_p$ = 300 µs | $V_F$ | 0.9 | 1.1 | 1.2 | V |
| | at $I_{PP} = I_{PPM}$ = 3.6 A, $t_p$ = 8/20 µs | $V_F$ | - | 1.5 | 1.72 | V |
| Dynamic resistance | $t_p$ = 100 ns (TLP; pin 2-1) | $r_{dyn}$ | - | 0.53 | - | Ω |
| Capacitance | at $V_R$ = 0 V; f = 1 MHz | $C_D$ | 21 | 27 | 33 | pF |


For technical questions, contact: ESDprotection@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

**ELECTRICAL CHARACTERISTICS** VESD26A2-03G
($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITIONS/REMARKS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Protection paths | Number of lines which can be protected | $N_{channel}$ | - | - | 1 | lines |
| Reverse stand off voltage | Max. reverse working voltage | $V_{RWM}$ | - | - | 26 | V |
| Reverse voltage | at $I_R$ = 0.1 µA | $V_R$ | 26 | - | - | V |
| Reverse current | at $V_R$ = 26 V | $I_R$ | - | < 0.01 | 0.1 | µA |
| Reverse breakdown voltage | at $I_R$ = 1 mA | $V_{BR}$ | 27.6 | 29.1 | 30.6 | V |
| Reverse clamping voltage | at $I_{PP} = I_{PPM}$ = 2.1 A, $t_p$ = 8/20 µs | $V_C$ | - | 43 | 48 | V |
| Forward clamping voltage | at $I_{PP}$ = 1 A, $t_p$ = 300 µs | $V_F$ | 0.9 | 1.1 | 1.2 | V |
| | at $I_{PP} = I_{PPM}$ = 2.1 A, $t_p$ = 8/20 µs | $V_F$ | - | 1.3 | 1.42 | V |
| Dynamic resistance | $t_p$ = 100 ns (TLP; pin 2-1) | $r_{dyn}$ | - | 1.9 | - | Ω |
| Capacitance | at $V_R$ = 0 V; f = 1 MHz | $C_D$ | 14 | 17.5 | 21 | pF |

**ELECTRICAL CHARACTERISTICS** VESD33A2-03G
($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITIONS/REMARKS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Protection paths | Number of lines which can be protected | $N_{channel}$ | - | - | 1 | lines |
| Reverse stand off voltage | Max. reverse working voltage | $V_{RWM}$ | - | - | 33 | V |
| Reverse voltage | at $I_R$ = 0.1 µA | $V_R$ | 33 | - | - | V |
| Reverse current | at $V_R$ = 33 V | $I_R$ | - | < 0.01 | 0.1 | µA |
| Reverse breakdown voltage | at $I_R$ = 1 mA | $V_{BR}$ | 35.5 | 37.4 | 39.3 | V |
| Reverse clamping voltage | at $I_{PP} = I_{PPM}$ = 1.6 A, $t_p$ = 8/20 µs | $V_C$ | - | 56 | 62.5 | V |
| Forward clamping voltage | at $I_{PP}$ = 1 A, $t_p$ = 300 µs | $V_F$ | 0.9 | 1.1 | 1.2 | V |
| | at $I_{PP} = I_{PPM}$ = 1.6 A, $t_p$ = 8/20 µs | $V_F$ | - | 1.22 | 1.32 | V |
| Dynamic resistance | $t_p$ = 100 ns (TLP; pin 2-1) | $r_{dyn}$ | - | 3.6 | - | Ω |
| Capacitance | at $V_R$ = 0 V; f = 1 MHz | $C_D$ | 12 | 15 | 18 | pF |


For technical questions, contact: ESDprotection@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

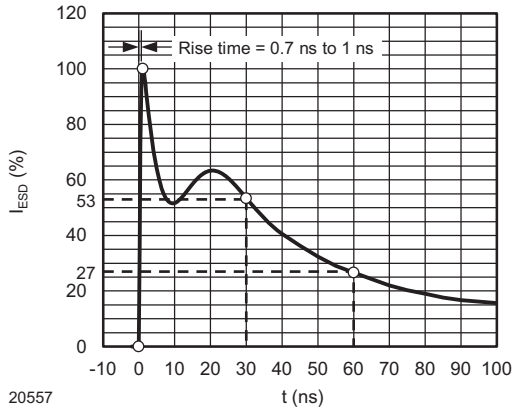



Fig. 1 - ESD Discharge Current Wave Form acc. IEC 61000-4-2 (330 Ω / 150 pF)

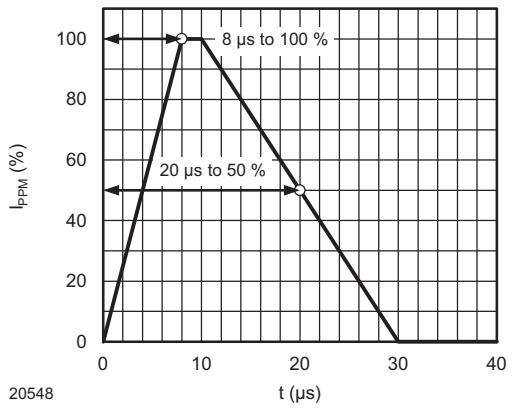



Fig. 2 - 8/20 µs Peak Pulse Current Wave Form acc. IEC 61000-4-5

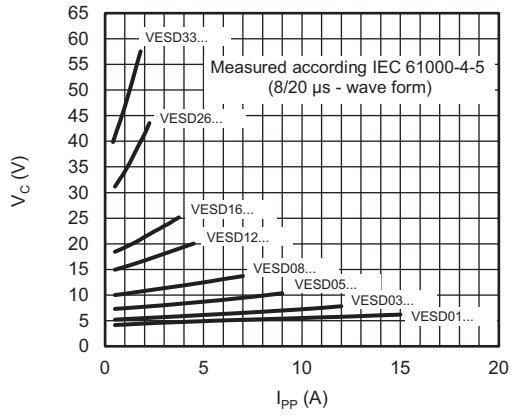



Fig. 3 - Typical Peak Clamping Voltage vs. Peak Pulse Current

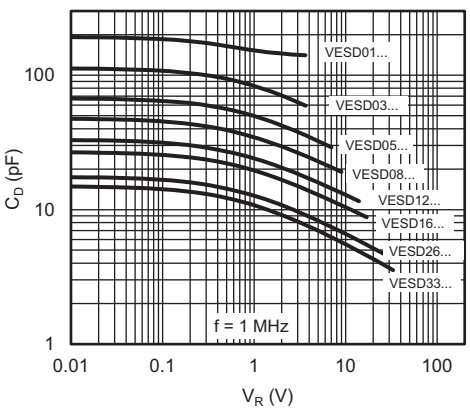



Fig. 4 - Typical Capacitance vs. Reverse Voltage

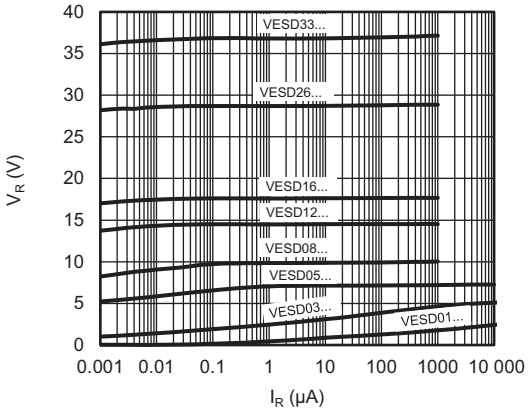



Fig. 5 - Typical Reverse Voltage vs. Reverse Current

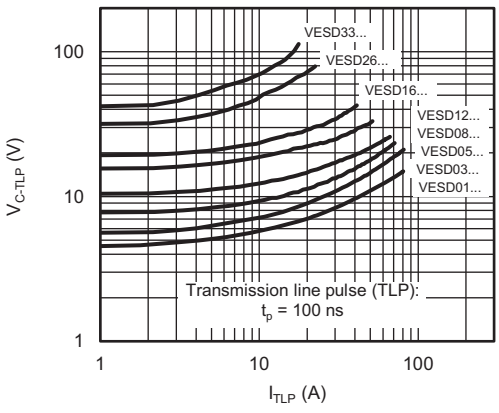



Fig. 6 - Typical Clamping Voltage vs. Peak Pulse Current



For technical questions, contact: ESDprotection@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

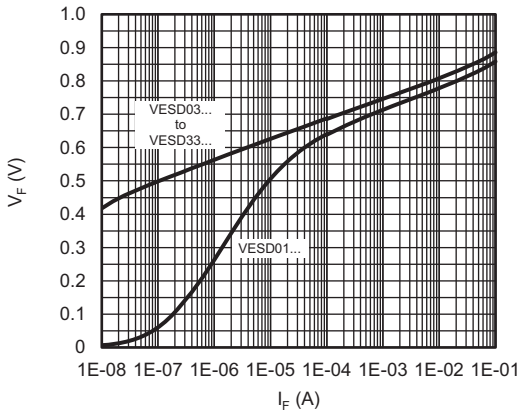



Fig. 7 - Typical Forward Voltage vs. Forward Current

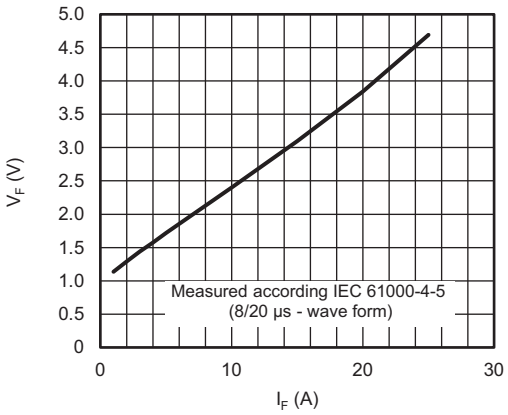
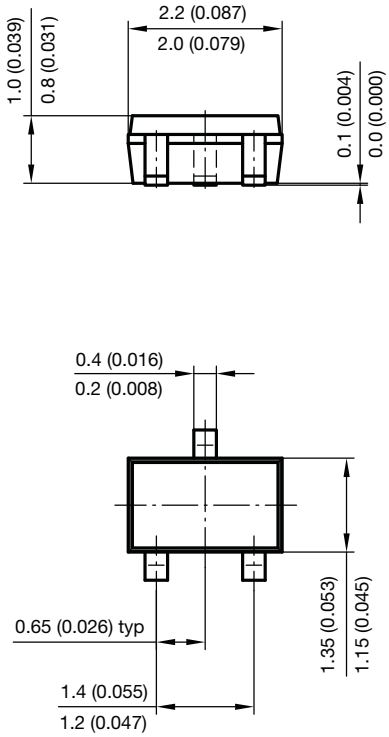
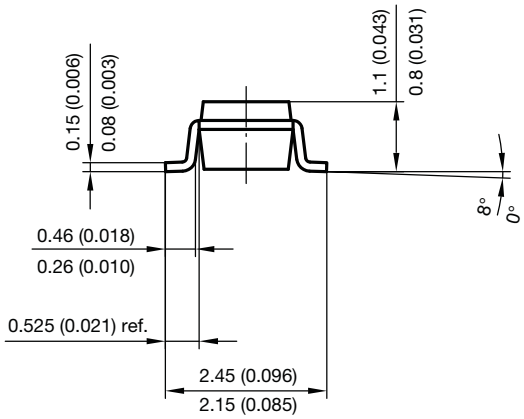


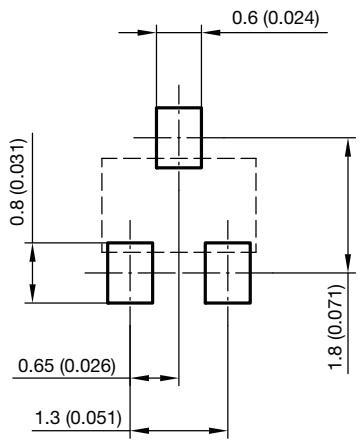

Fig. 8 - Typical Forward Voltage vs. Forward Current

## **PACKAGE DIMENSIONS** in millimeters (inches): **SOT-323**



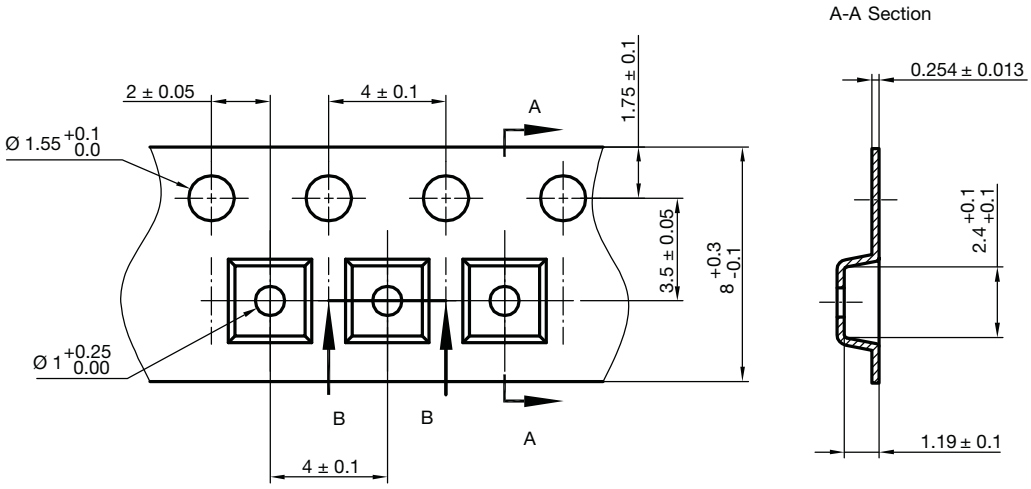

foot print recommendation:



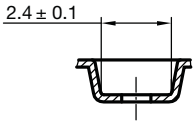

Document no.: 6.541-5040.02-4
Rev. 1 - Date: 06. April 2010
21113


For technical questions, contact: ESDprotection@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

## CARRIER TAPE SOT-323

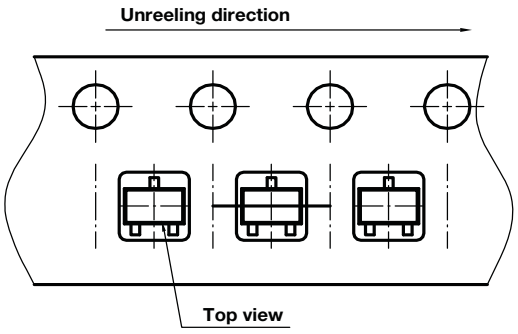



B-B Section




Document no.: S8-V-3717.08-002 (4)
Created - Date: 09. Feb. 2010
22762

## ORIENTATION IN CARRIER TAPE SOT-323




Document no.: S8-V-3717.08-002 (4)
Created - Date: 09. Feb. 2010
22761


For technical questions, contact: ESDprotection@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

# 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.

*© 2019 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED*

# Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

## Vishay Intertechnology:

LTO150H2R200JTE3 SMBJ12CA-E3/52 PR03000204700JAC00 SM8S43AHE3_A/I SS2FN6HM3/H
WSL2512R0300FTB WSL27265L000FEB PR01000101603JR500 SUD50P04-08-GE3
293D337X96R3D2T-E3 CRCW2512150RFKEGHP LTO150H470R0JTE3 PTCCL05H280HTE
PTF5610K000BYEK RCL12183R30FKEK SE20DLGHM3/I ISOA200R11003JT MSS2P3-M3/89A
PR02000204709JA100 1.5SMC91A-E3/57T BRT13-H-X006 CRCW1206510KFKEA RS0105R000FE12
SQD50P08-28_GE3 VS-50RIA60 CRCW040213K0FKTD CCF5510K0FKE36 CRCW08051M00FKEA
CRCW1206270KJNEA ILHB1806ER600V