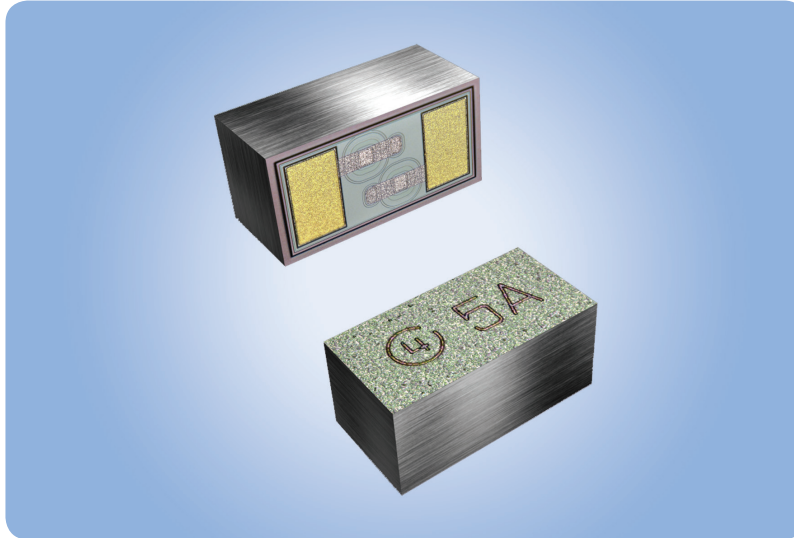


## BiSy Single-Line ESD Protection Diode With Typical Low Capacitance Down to 0.29 pF



### KEY BENEFITS

- Ultra compact CLP0603 package
  - 0.6 mm by 0.3 mm footprint
  - Extremely low profile of 0.27 mm
- Very low load capacitance down to 0.29 pF typical
- Low maximum leakage current of  $< 0.05 \mu\text{A}$  at the working voltage of 5.5 V
- Breakdown voltage of 8.5 V typical at 1 mA
- Maximum clamping voltage of 18 V at 2.5 A

### APPLICATIONS

- ESD protection of high speed signal or data points like HDMI, USB 3.0, and Thunderbolt in portable electronics, including smartphones, mobile phones, digital cameras, and portable gaming systems

### RESOURCES

- Datasheet: VBUS05B1-SD0 - [www.vishay.com/ppg?85899](http://www.vishay.com/ppg?85899)
- For technical questions contact [ESDProtection@vishay.com](mailto:ESDProtection@vishay.com)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



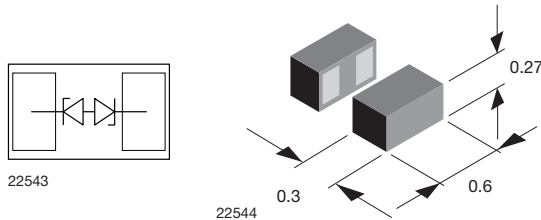
**RoHS**  
COMPLIANT

**HALOGEN**  
**FREE**

**GREEN**  
(5-2008)

A **WORLD OF**  
**SOLUTIONS™**

## BiSy Single-Line ESD Protection Diode With Typical Low Capacitance Down to 0.29 pF



### MARKING (example only)



1 = year code  
Open circle = month code and pin 1  
XY = type code

### FEATURES

- Ultra compact CLP0603 package
- Low package height < 0.3 mm
- 1-line ESD protection
- Working range  $\pm 5.5$  V
- Low leakage current < 0.05  $\mu$ A
- Ultra low load capacitance  $C_D = 0.29$  pF typ.
- ESD immunity acc. IEC 61000-4-2  
 $\pm 16$  kV contact discharge  
 $\pm 16$  kV air discharge
- Lead plating: Au (e4)
- Lead material: Ni
- Backside coating
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
[5-2008]

### DESIGN SUPPORT TOOLS AVAILABLE



3D Models

### ORDERING INFORMATION

| PART NUMBER<br>(EXAMPLE) | ENVIRONMENTAL AND QUALITY CODE                  |  | PACKAGING CODE                                       | ORDERING CODE<br>(EXAMPLE) |
|--------------------------|---|--|--|----------------------------|
|                          | RoHS-COMPLIANT +<br>LEAD (Pb)-FREE TERMINATIONS |  | GOLD PLATED  |                            |
|                          | GREEN   |  |  |                            |
| VBUS05B1-SD0-            | G   |  | 4<br>15K PER 7" REEL<br>(8 mm TAPE)<br>15K/BOX = MOQ | -08<br>VBUS05B1-SD0-G4-08  |

### PACKAGE DATA

| DEVICE NAME  | PACKAGE NAME | TYPE CODE | WEIGHT  | SOLDERING CONDITIONS  |
|--------------|--------------|-----------|---------|---|
| VBUS05B1-SD0 | CLP0603-2L   | 5A        | 0.12 mg | Peak temperature max. 260 °C<br>Reflow soldering according JEDEC® STD-020 |

### ABSOLUTE MAXIMUM RATINGS

| PARAMETER             | TEST CONDITIONS   | SYMBOL    | VALUE       | UNIT |
|-----------------------|---|-----------|-------------|------|
| Peak pulse current    | acc. IEC 61000-4-5, 8/20 $\mu$ s/single shot                            | $I_{PPM}$ | 2.5         | A    |
| Peak pulse power      | Pin 1 to pin 2<br>acc. IEC 61000-4-5; $t_p = 8/20$ $\mu$ s; single shot | $P_{PP}$  | 45          | W    |
| ESD immunity          | Contact discharge acc. IEC 61000-4-2; 10 pulses                         | $V_{ESD}$ | $\pm 16$    | kV   |
|                       | Air discharge acc. IEC 61000-4-2; 10 pulses                             |           | $\pm 16$    |      |
| Operating temperature | Junction temperature  | $T_J$     | -55 to +150 | °C   |
| Storage temperature   |   | $T_{stg}$ | -55 to +150 | °C   |

Revision: 17-May-2019