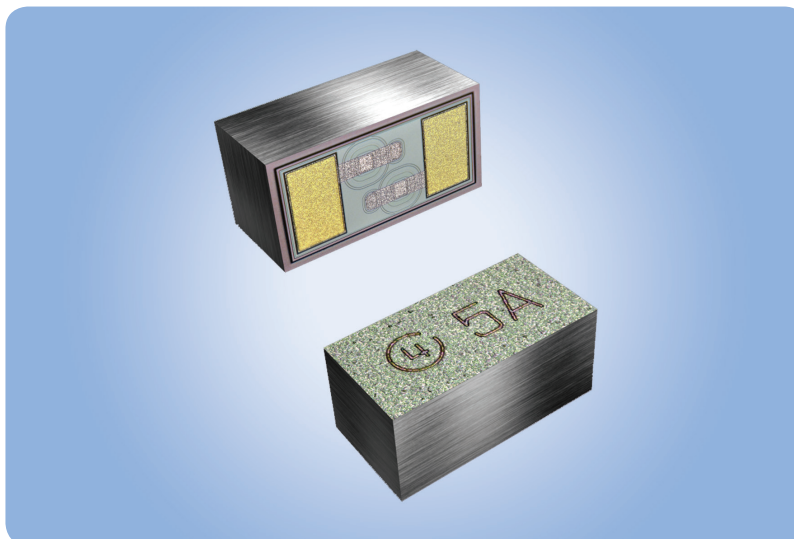




DIODES

VBUS03B1-SD0 and VCUT03E1-SD0

BiSy Single-Line ESD Protection Diodes Feature Low Working Range of ± 3.3 V



KEY BENEFITS

- Low working range of ± 3.3 V
- Ultra compact CLP0603 silicon package
 - 0.6 mm x 0.3 mm footprint
 - Extremely low height of 0.27 mm
- Ultra low load capacitance down to 0.29 pF typical
- Transient protection for one data line as per IEC 61000-4-2:
 - VBUS03B1-SD0: ± 16 kV (air and contact discharge)
 - VCUT03E1-SD0: ± 30 kV (air and contact discharge)
- Supports reflow soldering to $+260$ °C for 10 s per JEDEC® STD-020
- RoHS-compliant, halogen-free, and Vishay Green

APPLICATIONS

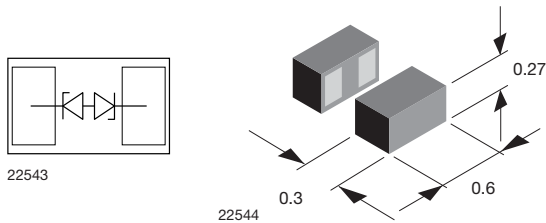
- ESD protection of high speed signal or data ports like HDMI, USB 3.1, and Thunderbolt in smartphones, mobile phones, digital cameras, and portable gaming systems

RESOURCES

- Datasheet: VBUS03B1-SD0 - www.vishay.com/ppg?85908,
VCUT03E1-SD0 - www.vishay.com/ppg?85909
- For technical questions contact ESDProtection@vishay.com
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



Ultra Low Capacitance Bidirectional Symmetrical (BiSy) Single Line ESD Protection Diode in Silicon Package



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 ± 3.3 V
- Low leakage current < 0.05 μ A
- Ultra low load capacitance $C_D = 0.29$ pF typ.
- ESD immunity acc. IEC 61000-4-2 ± 16 kV contact discharge ± 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



DESIGN SUPPORT TOOLS AVAILABLE



3D Models

ORDERING INFORMATION

PART NUMBER (EXAMPLE)	ENVIRONMENTAL AND QUALITY CODE		PACKAGING CODE	ORDERING CODE (EXAMPLE)
	RoHS-COMPLIANT + LEAD (Pb)-FREE TERMINATIONS	GOLD PLATED	15K PER 7" REEL (8 mm TAPE) 15K/BOX = MOQ	
	GREEN			
VBUS03B1-SD0-	G	4	-08	VBUS03B1-SD0-G4-08

PACKAGE DATA

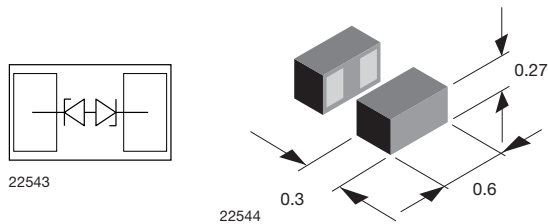
DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	SOLDERING CONDITIONS
VBUS03B1-SD0	CLP0603-2L	3B	0.12 mg	Peak temperature max. 260 °C Reflow soldering according JEDEC® STD-020

ABSOLUTE MAXIMUM RATINGS

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

Revision: 17-May-2019

Bidirectional Symmetrical (BiSy) Single Line ESD Protection Diode in Silicon Package



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 ± 3.3 V
- Low leakage current < 0.1 μ A
- Low load capacitance $C_D < 14$ pF
- ESD immunity acc. IEC 61000-4-2 ± 30 kV contact discharge ± 30 kV air discharge
- Lead plating: Au (e4)
- Lead material: Ni
- Topside coating
- e4 - precious metal (e.g. Ag, Au, NiPd, NiPdAu) (no Sn)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



DESIGN SUPPORT TOOLS AVAILABLE



ORDERING INFORMATION				
PART NUMBER (EXAMPLE)	ENVIRONMENTAL AND QUALITY CODE		PACKAGING CODE	ORDERING CODE (EXAMPLE)
	RoHS-COMPLIANT + LEAD (Pb)-FREE TERMINATIONS	GOLD PLATED	15K PER 7" REEL (8 mm TAPE) 15K/BOX = MOQ	
	GREEN			
VCUT03E1-SD0-	G	4	-08	VCUT03E1-SD0-G4-08

PACKAGE DATA				
DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	SOLDERING CONDITIONS
VCUT03E1-SD0	CLP0603-2L	3E	0.12 mg	Peak temperature max. 260 °C 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 μ s/single shot		I_{PPM}	6	A
Peak pulse power	Pin 1 to pin 2 acc. IEC 61000-4-5; $t_p = 8/20$ μ s; single shot		P_{PP}	78	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	
Operating temperature	Junction temperature		T_J	-55 to +150	°C
Storage temperature			T_{stg}	-55 to +150	°C

Revision: 17-May-2019