



BiSy 2-Line, Ultra Low Capacitance ESD Protection Diode Saves Board Space in Portable Electronics



KEY BENEFITS

- Ultra low load capacitance down to 0.35 pF typical
- Compact LLP1006-3L package
 - Low height of < 0.4 mm
- Features a “flow through” design
- Low maximum leakage current of < 0.1 μ 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 3.6 A
- Provides transient protection for data lines as per IEC 61000-4-2 at \pm 20 kV (air and contact discharge)
- Supports reflow soldering to 260 °C for 10 s
- RoHS-compliant, halogen-free, and [Vishay Green](#)

APPLICATIONS

- ESD protection of high speed data lines including HDMI, DisplayPort, eSATA, USB, 1394 / FireWire, and Thunderbolt in smartphones, tablets, notebooks, and wearable devices

RESOURCES

- Datasheet: VBUS05M2-HT1 - www.vishay.com/ppg?85923
- For technical questions contact ESDProtection@vishay.com
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



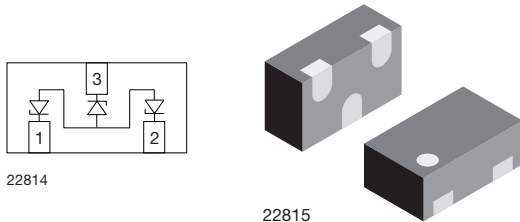
RoHS
COMPLIANT

HALOGEN
FREE

GREEN
(6-2008)



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MARKING (example only)



Bar = cathode marking
 X = date code
 Y = type code (see table below)

ADDITIONAL RESOURCES



FEATURES

- Compact LLP1006-3L package
- Low package height < 0.4 mm
- 2-line ESD protection
- Low leakage current $I_R < 0.1 \mu A$
- Low capacitance: $C_D < 0.4 \text{ pF}$
- Ideal for high speed data line like
 - HDMI, DisplayPort, eSATA
 - USB, 1394 / firewire
 - Thunderbolt
- ESD immunity acc. IEC 61000-4-2
 - $\pm 20 \text{ kV}$ contact discharge
 - $\pm 20 \text{ kV}$ air discharge
- Soldering can be checked by standard vision inspection, no X-ray necessary
- Pin plating NiPdAu (e4) no whisker growth
- e4 - precious metal (e.g. Ag, Au, NiPd, NiPdAu) (no Sn)
- PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



ORDERING INFORMATION			
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL (8 mm TAPE ON 7" REEL)	MINIMUM ORDER QUANTITY
VBUS05M2-HT1	VBUS05M2-HT1-G4-08	8000	8000

PACKAGE DATA						
DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VBUS05M2-HT1	LLP1006-3L	5	0.72 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	Acc. IEC 61000-4-5; $t_p = 8/20 \mu s$; single shot	I_{PPM}	3.6	A
Peak pulse power	Acc. IEC 61000-4-5; $t_p = 8/20 \mu s$; single shot	P_{PP}	65	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	
Operating temperature	Junction temperature	T_J	-55 to +125	°C
Storage temperature		T_{STG}	-55 to +150	°C

Revision: 17-Sep-2019

 PATENT(S): www.vishay.com/patents

This Vishay product is protected by one or more United States and international patents.

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