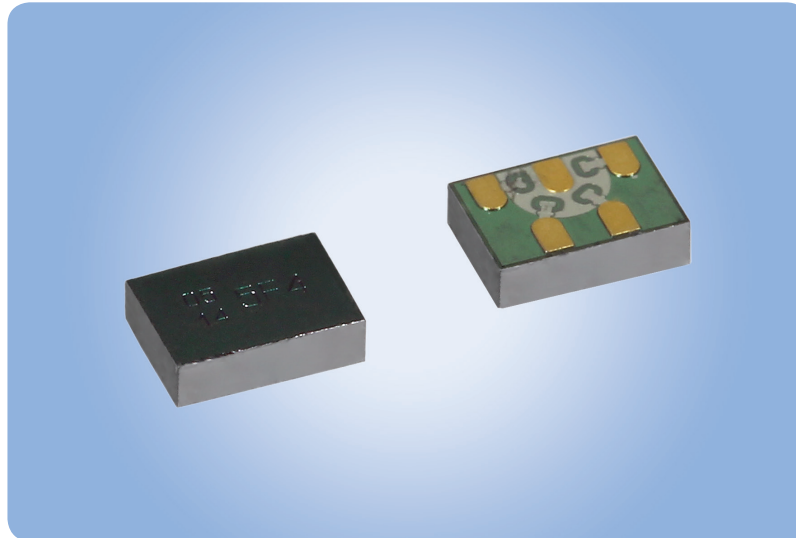




4-Line ESD Protection Diode Provides Extreme Size Reduction for Portable Electronics



KEY BENEFITS

- Ultra compact CLP1007-5L package
 - Measures only 1.0 mm x 0.7 mm with a low height of 0.27 mm
- Low load capacitance of 0.9 pF typical
- 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 7.5 V typical at 1 mA
- Maximum clamping voltage of 15 V at 3 A
- Provides transient protection for data lines as per IEC 61000-4-2 at \pm 15 kV (air and contact discharge)
- Supports reflow soldering to +260 °C for 10 s

APPLICATIONS

- SD protection of high speed data lines including HDMI, DisplayPort, eSATA, USB, 1394 / fireWire, and Thunderbolt in mobile phones, digital cameras, and portable gaming systems

RESOURCES

- Datasheet: please visit www.vishay.com/ppg?82665
- For technical questions contact ESDProtection@vishay.com
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



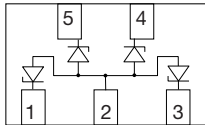
RoHS
COMPLIANT

HALOGEN
FREE

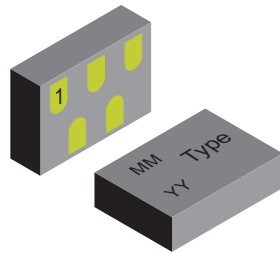
GREEN
(5-2008)



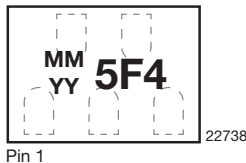
4-Line ESD Protection Diode Provides Extreme Size Reduction for Portable Electronics



22736



MARKING



Pin 1

5F4 = type code
MM = date code month
YY = date code year

ADDITIONAL RESOURCES



3D Models

FEATURES

- Compact chip level page CLP1007-5L
- Length = 1 mm; width = 0.7 mm; height = 0.27 mm
- 4-lines, unidirectional ESD protection array
- Low leakage current $I_R < 0.1 \mu A$
- Low capacitance at $V_R = 0 V = 0.9 pF$ (typ.)
- Ideal for high speed data line like
 - HDMI, DisplayPort, eSATA
 - USB, 1394/firewire
 - Thunderbolt
- ESD immunity acc. IEC 61000-4-2
 - $\pm 15 kV$ contact discharge
 - $\pm 15 kV$ air discharge
- e4 - precious metal (e.g. Ag, Au, NiPd, NiPdAu) (no Sn)
- 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
VBUS54FD-SD1	VBUS54FD-SD1-G4-08	10 000	10 000

PACKAGE DATA

DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VBUS54FD-SD1	CLP1007-5L	5F4	0.45 mg	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25 \text{ }^\circ\text{C}$, unless otherwise specified)

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	A
Peak pulse power	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}	± 15	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 15	
Operating temperature	Junction temperature	T_J	-40 to +125	°C
Storage temperature		T_{STG}	-55 to +150	°C

Revision: 30-Sep-2019

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[82356240030](#) [VESD12A1A-HD1-GS08](#) [CPDUR5V0R-HF](#) [CPDUR24V-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#)
[D1213A-01LP4-7B](#) [D1213A-02WL-7](#) [ESDLIN1524BJ-HQ](#) [5KP100A](#) [5KP15A](#)