RCLAMP3321P

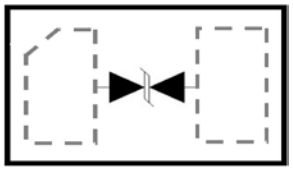
Ultra Low Capacitance ESD Protection Diode

DESCRIPTION

RCLAM3321P is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces.

With typical capacitance of 0.25pF, RCLAM3321P is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 (±15kV air, ±8kV contact discharge), IEC61000-4-4 (electrical fast transient -EFT) (40A,5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc. RCLAMP3321P uses ultra-small SLP1006P2 package.

Each RCLAMP3321P device can protect one high-speed data line. It offers system designers flexibility to protect single data line where space is a premium concern. The combined features of low capacitance, ultra-small size and high ESD robustness make RCLAM3321P ideal for high-speed data port and high-frequency line applications, such as cellular phones and HD visual devices.



FEATURES

- Transient protection for high-speed data lines
  IEC 61000-4-2 (ESD) ±15kV (Air)
  ±8kV (Contact)
  IEC 61000-4-4 (EFT) 40A (5/50 ns)
- Cable Discharge Event (CDE)
- Package optimized for high-speed lines
- Ultra-small package (1.0mm×0.6mm×0.5mm)
- Protects one data, control line
- Low capacitance: 0.25pF (Typical)
- Low leakage current
- Low clamping voltage

APPLICATIONS

- Serial ATA
- Desktops, Servers and Notebooks
- Cellular Phones
- MDDI Ports
- USB Data Line Protection
- Display Ports
- Digital Visual Interfaces (DVI)

MACHANICAL DATA

- SLP1006P2 package
- Flammability Rating: UL 94V-0
- High temperature soldering guaranted:260℃/10s

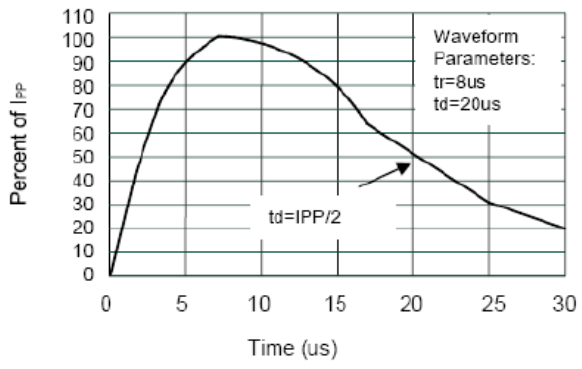
ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±20 ±20	kV
P_{PP}	Peak Pulse Power (8/20μs)	84	W
T_{OPT}	Operating Temperature	-55~125	°C
T_{STG}	Storage Temperature	-55~150	°C

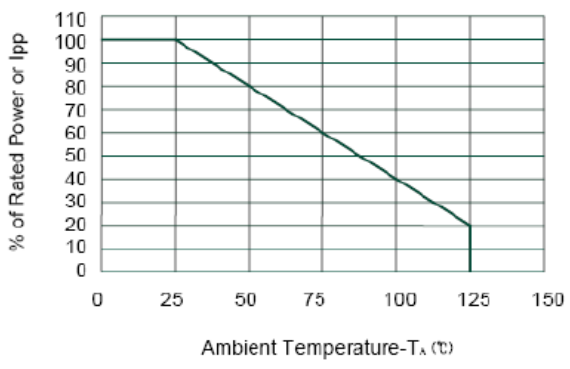
ELECTRICAL CHARACTERISTICS (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				3.3	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	4.2			V
I_R	Reverse Leakage Current	V_{RWM} = 3.3V			100	nA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20μs			12	V
		I_{PP} = 4A, t_p = 8/20μs			21	V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz		0.25		pF

ELECTRICAL CHARACTERISTICS CURVE

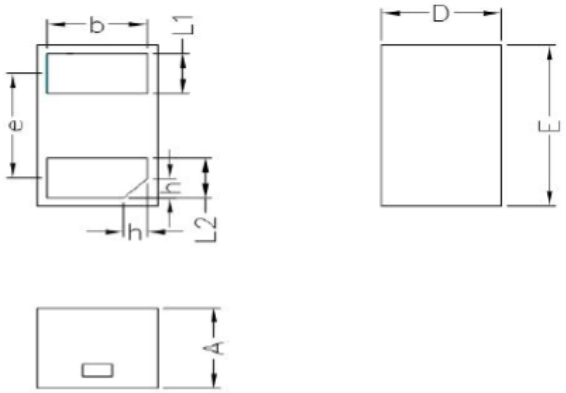


Pulse Waveform



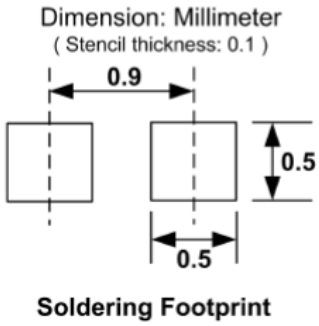
Power Derating Curve

SLP1006P2 PACKAGE OUTLINE DIMENSIONS



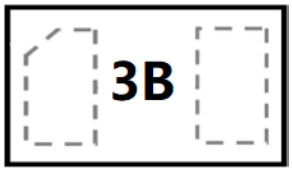
Unit: mm

	MIN	NOM	MAX
D	0.55	0.60	0.65
E	0.95	1.00	1.05
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
b	0.45	0.50	0.55
e		0.65BSC	
A	0.45	0.50	0.55
h	0.07	0.12	0.17



Soldering Footprint

Marking



Ordering information

Order code	Package	Baseqty	Delivery mode
UMW RCLAM3321P	SLP1006P2	10000	Tape and reel