UMW RCLAMP0531T.TCT

1.Description

RailClamp is an ultra low capacitance Transient Voltage Suppressor (TVS) designed to protect high speed data interfaces. This device has been specifically designed to mprotect sensitive comp-onents which are connected to highspeed data and transmission lines from over-voltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

2.Applications

- Cellular Handsets & Accessories
- Digital Visual Interface (DVI)
- FM Antenna
- MDDI Ports
- USB Ports
- PCI Express
- Serial ATA

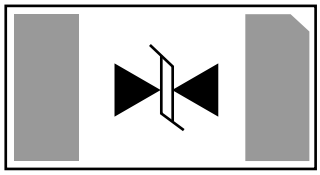
3.Features

- Transient protection for data lines to
- IEC 61000-4-2 (ESD) ±20kV (air), ±12kV (contact)
- IEC 61000-4-4 (EFT) 40A (tp = 5/50ns)
- Cable Discharge Event (CDE)
- Ultra-small package (1.0 x 0.6 x 0.4mm)
- Protects one I/O line
- Low capacitance: 0.8pF
- Low clamping voltage
- Low operating voltage: 5.0V
- Solid-state silicon-avalanche technology

4.Mechanical Characteristics

- SLP1006P2T package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking code + date code
- Packaging : Tape and Reel
- Lead Finish: NiPdAu
- Pb-Free, Halogen Free, RoHS/WEEE Compliant

5.Pinning information



SLP1006P2

6.Absolute Maximum Rating

Parameter	Symbol	Value	Units
Peak Pulse Power (t_p=8/20μs)	P_{PK}	80	W
Peak Pulse Current (t_p=8/20μs)	I_{PP}	4	A
ESD per IEC 61000-4-2(Air)	V_{ESD}	±20	kV
ESD per IEC 61000-4-2(Contact)		±12	kV
Junction Temperature Range	T_J	-55 to 125	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

7.Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6	9.3	11	V
Reverse Leakage Current	I_R	V_{RWM}=5V, T=25°C		0.01	0.1	μA
Clamping Voltage	V_C	I_{PP}=1A (t_p=8/20μs)			12	V
		I_{PP}=4A (t_p=8/20μs)			20	V
Junction Capacitance	C_J	V_R=0V, f=1MHz		0.5	0.8	pF

8.1Typical characteristic

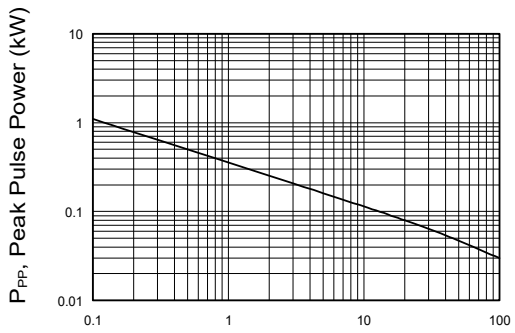


Figure 1: Non-Repetitive Peak Pulse Power vs. Pulse Time

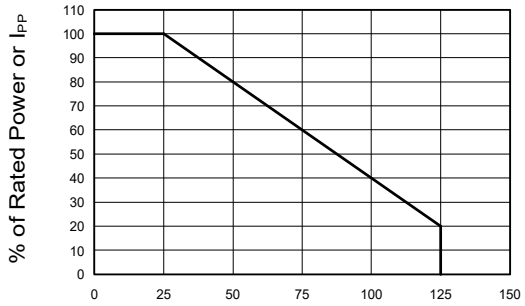


Figure 2: Power Derating Curve

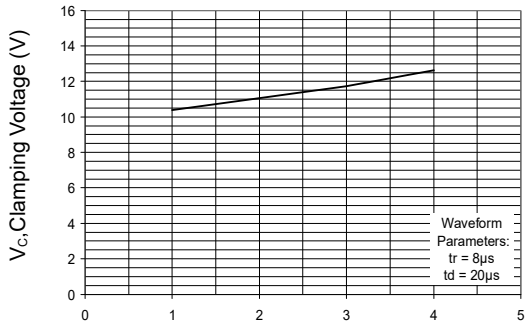


Figure 3: Clamping Voltage vs. Peak Pulse Current

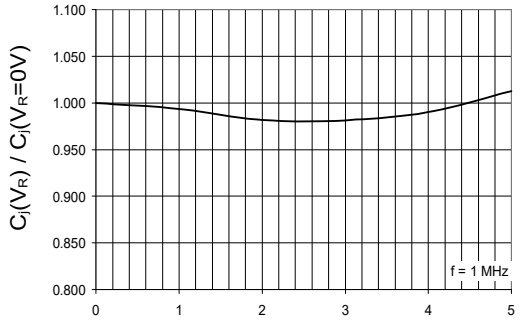


Figure 4: Normalized Capacitance vs. Reverse Voltage

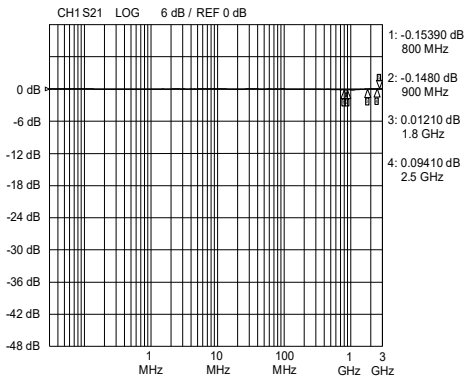
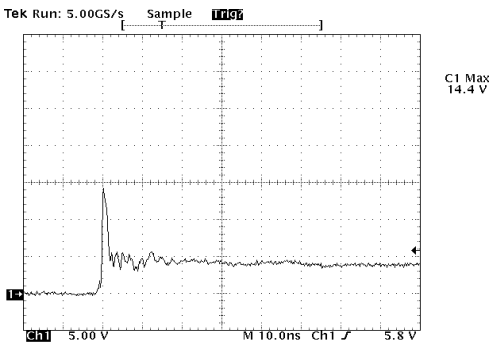


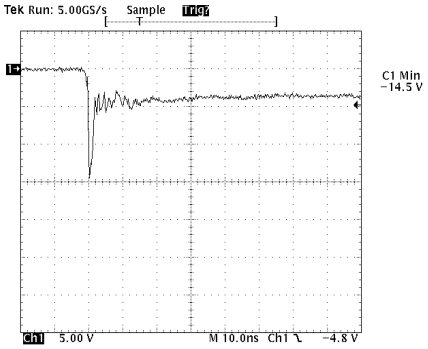
Figure 5: Insertion Loss S21

8.2Typical characteristic



Note: Data is taken with a 10x attenuator

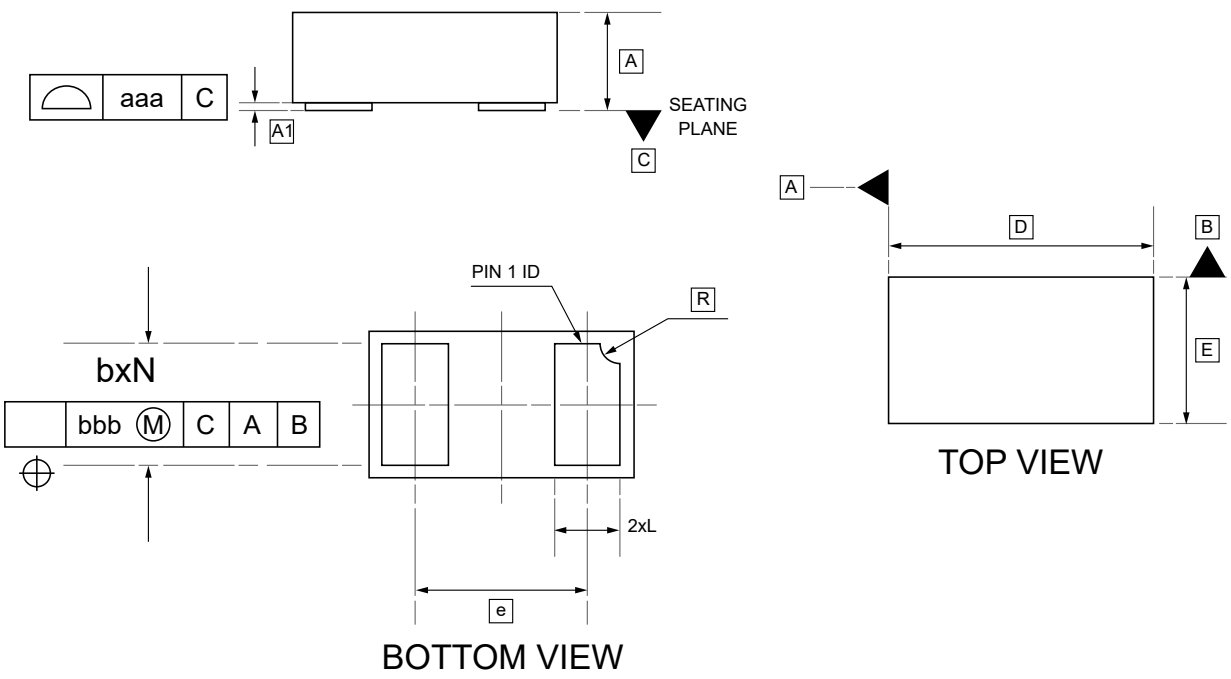
Figure 6: ESD Clamping
(+8kV Contact per IEC 61000-4-2)



Note: Data is taken with a 10x attenuator

Figure 7: ESD Clamping
(-8kV Contact per IEC 61000-4-2)

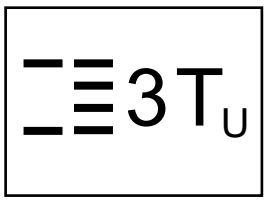
9.SLP1006P2 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	b	D	E	e	L	R	N	aaa	bbb
Min	0.37	0.00	0.45	0.90	0.50	0.65	0.20	0.05	2	0.08	0.10
Max	0.43	0.05	0.55	1.10	0.70	BSC	0.30	0.15			

10.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW RCLAMP0531T.TCT	SLP1006P2	3000	Tape and reel

11.Disclaimer

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