RCLAMP0521P

Low Capactionce 1-Line Bi-directional TVS Diode

Features

Ultra small package: 1.0x0.6x0.5mm
Ultra low capacitance: 0.3pF typical
Ultra low leakage: nA level
Low operating voltage: ±5V
Low clamping voltage
2-pin leadless package
Complies with following standards:
– IEC 61000-4-2 (ESD) immunity test
Air discharge: ±20kV
Contact discharge: ±15kV
– IEC61000-4-5 (Lightning) 4A (8/20μs)
RoHS Compliant
Lead Finish: NiPdAu

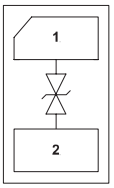
Mechanical Characteristics

Package: DFN1006-2 (0402)
Lead Finish: Matte Tin
Case Material: "Green" Molding Compound.
Moisture Sensitivity: Level 3 per J-STD-020
Terminal Connections: See Diagram Below

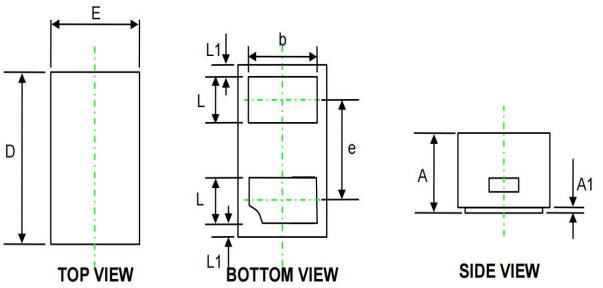
Applications

Smart phones
Display Ports
MDDI Ports
USB Ports
Digital Video Interface (DVI)
PCI Express and Serial SATA Ports

Circuit Diagram



DFN1006-2



Symbol	Dimensions In Millimeters (mm)		
	Min.	Typ.	Max.
A	0.44	0.47	0.50
A1	0.00	0.03	0.05
D	0.95	1.00	1.08
E	0.55	0.60	0.68
b	0.40	0.50	0.60
e	-	0.65	-
L	0.20	0.25	0.30
L1	0.05 REF.		

Dimensions in inches and (millimeters)

Ordering information

Device	MARKING
RCLAMP0521P	N

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	80	W
Peak Pulse Current (8/20μs)	Ipp	4	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±20 ±15	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	5.8	7.5	9	V	I_T = 1mA
Reverse Leakage Current	I_R			0.08	μA	V_{RWM} = 5V
Clamping Voltage	V_C			12	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			21	V	I_{PP} = 4A (8 x 20us pulse)
Junction Capacitance	C_J		0.3		pF	VR = 0V, f = 1MHz IO to IO

RATING AND CHARACTERISTIC CURVES (PCLAMP0521P)

Fig1. 8/20μs Pulse Waveform

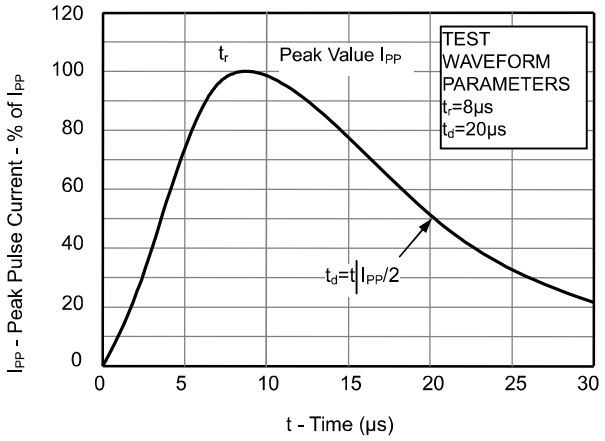

Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

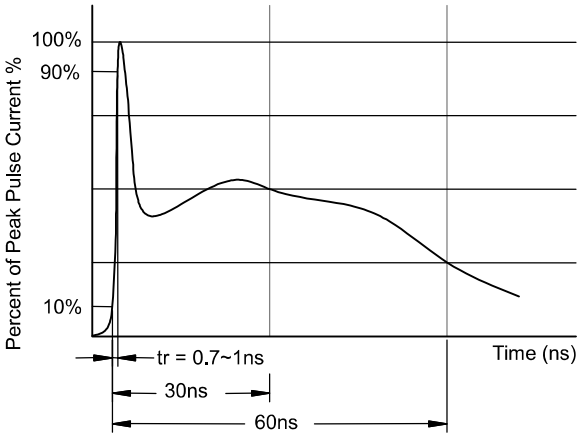

Fig3. Power Derating Curve