RLSD32A031~241LC/V Series

ULTRA LOW CAPACITANCE TVS/ESD ARRAY

Description

The RLSD32AXX1LC and RLSD32AXX1LV Series are ultra low capacitance transient voltage suppressor arrays, designed to protect applications such as portable electronics and SMART phones. This series is available in both unidirectional and bidirectional configurations and is rated at 350 Watts for an 8/20μs waveshape. The RLSD32AXX1LC and RLSD32AXX1LV Series meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This series offers a ultra low capacitance and low leakage current in a miniature SOD-323 package.

Features

- 350 Watts peak pulse power (tp = 8/20μs)
- Transient protection for data lines to
  IEC 61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
  IEC 61000-4-4 (EFT) 40A (5/50ns)
  IEC 61000-4-5 (Lightning) 24A (8/20μs)
- Small package for use in portable electronics
- Suitable replacement for MLV's in ESD protection applications
- Protects one I/O or power line
- Low clamping voltage
- Working voltages: 3.3V, 5V, 12V, 15V, 24V
- Low leakage current
- Solid-state silicon avalanche technology

Mechanical Characteristics

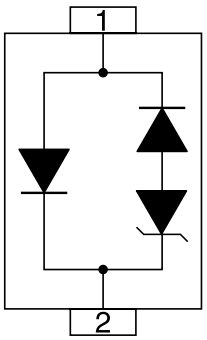
- Molded JEDEC SOD-323
- Weight 10 milligrams (Approximate)
- Flammability rating UL 94V-0
- 8mm Tape and Reel Per EIA Standard 481
- Device Marking: Marking Code & Polarity Band (Unidirectional Only)

Applications

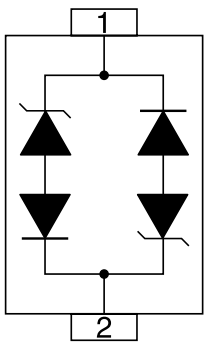
- Ethernet – 10/100/1000 Base T
- Cellular Phones
- Handheld – Wireless Systems
- Personal Digital Assistant(PDA)
- PUSB Interface

Schematic & PIN Configuration

LV SERIES



LC SERIES



Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (tp =8/20μs)	P_{pk}	350	Watts
Lead Soldering Temperature	T_L	260 (10 sec.)	°C
Operating Temperature	T_J	-55 to +125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Characteristics (T=25°C)

RLSD32A031LC/RLSD32A031LV

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}	-	-	-	3.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	3.3	-	-	V
Reverse Leakage Current	I_R	V_{RWM} =3V,T=25°C	-	-	5	μA
Clamping Voltage	V_C	I_{PP}=1A,I_P=8/20μS	-	-	7.0	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz	-	-	3	pF

RLSD32A051LC/RLSD32A051LV

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}	-	-	-	5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.1	-	-	V
Reverse Leakage Current	I_R	V_{RWM} =5V,T=25°C	-	-	5	μA
Clamping Voltage	V_C	I_{PP}=1A,I_P=8/20μS	-	-	9.8	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz	-	-	3	pF

Electrical Characteristics (T=25°C)

RLSD32A121LC/RLSD32A121LV

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}	-	-	-	12	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	13.5	-	-	V
Reverse Leakage Current	I_R	V_{RWM} =12V,T=25°C	-	-	2	μA
Clamping Voltage	V_C	I_{PP}=1A,I_P=8/20μS	-	-	19	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz	-	-	3	pF

RLSD32A151LC/RLSD32A151LV

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}	-	-	-	15	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	16.7	-	-	V
Reverse Leakage Current	I_R	V_{RWM} =15V,T=25°C		-	1	μA
Clamping Voltage	V_C	I_{PP}=1A,I_P=8/20μS	-	-	24	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz	-	-	3	pF

RLSD32A181LC/RLSD32A181LV

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}	-	-	-	18	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	20.0	-	-	V
Reverse Leakage Current	I_R	V_{RWM} =18V,T=25°C	-	-	1	μA
Clamping Voltage	V_C	I_{PP}=1A,I_P=8/20μS	-	-	29	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz	-	-	3	pF

Electrical Characteristics (T=25°C)

RLSD32A241LC/RLSD32A241LV

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				24	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	26.7			V
Reverse Leakage Current	I_R	V_{RWM} =24V,T=25°C			1	μA
Clamping Voltage	V_C	I_{PP}=1A,I_P=8/20μS			43	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz			3	pF

Protection Products

Typical Characteristics

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

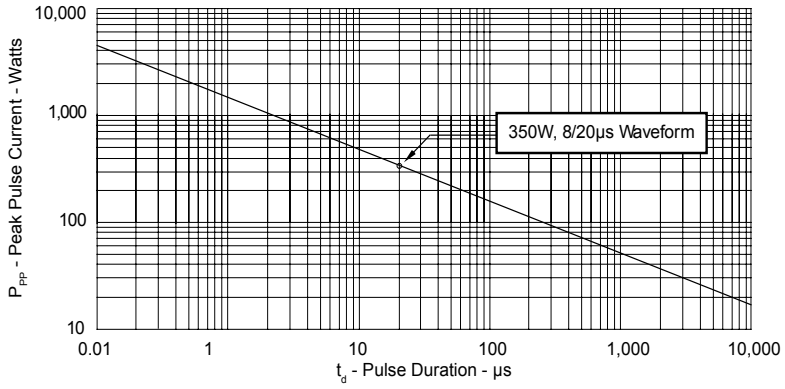
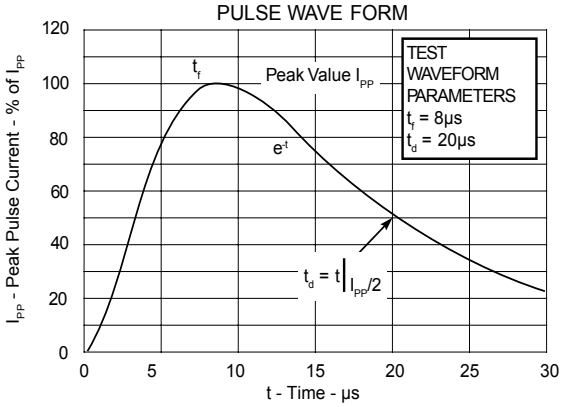


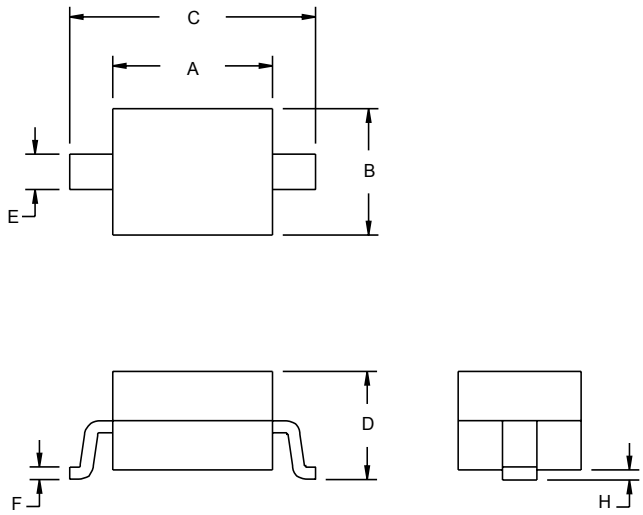
FIGURE 2
PULSE WAVE FORM



Protection Products

Outline Drawing - SOD-323

PACKAGE OUTLINE

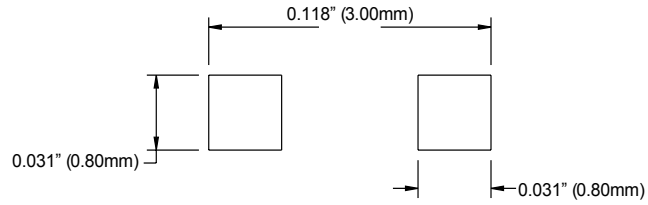


SOD-323 PACKAGE

PACKAGE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.60	1.90	0.063	0.075
B	1.15	1.45	0.045	0.057
C	2.39	2.70	0.094	0.106
D	0.92	1.10	0.036	0.043
E	0.25	0.40	0.010	0.016
F	0.10	0.20	0.004	0.008
H	-	0.10	-	0.004

MOUNTING PAD



NOTES

1. Controlling Dimensions in Millimeters.
2. Dimensions are exclusive of mold flash and metal burrs.

TAPE &REEL ORDERING NOMENCLATURE

1. Surface mount product is taped and reeled in accordance with EIA-481.
2. Suffix -T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., *GBLC05C-T7*.

Outline & Dimensions: Rev 1 - 11/01, 06010

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