

## LIN- bus ESD Protection Diode

### Description

The UESD1LIN is low capacitance TVS arrays designed to protect one automotive Local Interconnect Network (LIN) bus line from the damage caused by electrostatic Discharge (ESD) and other transients. This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 , It is suitable for use in automotive applications.

### Feature

- ◆ AEC-Q101 qualified
- ◆ Moisture Sensitivity Level (MSL -1)
- ◆ 210~220 Watts Peak Pulse Power (tp=8/20µs)
- ◆ Protects of one automotive LIN-bus line
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◆ IEC61000-4-5 (Lightning) 3A (8/20µs)

### Applications

- ◆ LIN-bus protection
- ◆ Automotive applications

### Mechanical Data

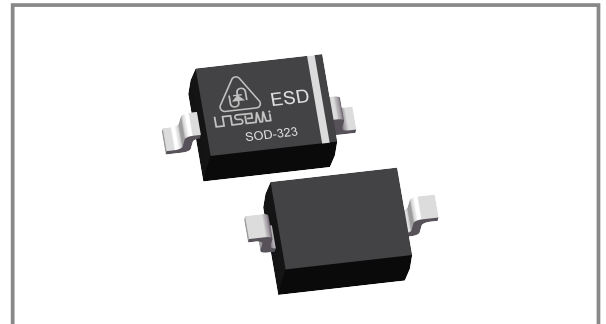
- ◆ SOD-323 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 5.0 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

### Mechanical Characteristics

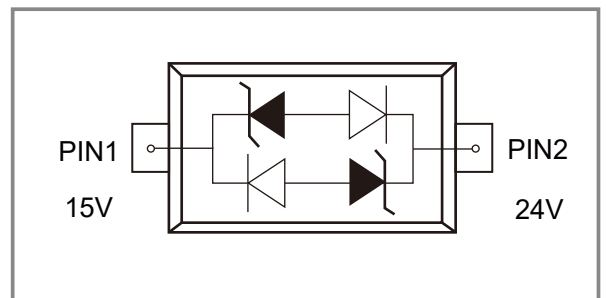
Parameter	Symbol	Value	Units
Peak Pulse Power (Tp=8/20µs waveform)	P <sub>pp</sub>	PIN1~2: 220 PIN2~1: 210	Watts
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150	°C



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### Functional Diagram



Electrical Characteristics @ 25°C Unless Otherwise Specified )

Characteristics	Symbol	Conditions	Min.	Typ.	Max	Unit	
Reverse Working Voltage	V <sub>RWM</sub>	UESD1LIN (15 V)	--	--	15.0	V	
		UESD1LIN (24 V)	--	--	24.0	V	
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA UESD1LIN (15 V)	16.7	18.9	20.3	V	
		I <sub>T</sub> =1mA UESD1LIN (24 V)	26.7	27.8	31.5	V	
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> =15V; T=25°C	--	--	1.0	μA	
		V <sub>RWM</sub> =24V; T=25°C	--	--	1.0	μA	
Junction capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz;	--	1.0	--	pF	
Clamping Voltage	V <sub>C</sub>	UESD1LIN (15 V)	I <sub>pp</sub> =1.0A, T <sub>p</sub> =8/20μs:	--	--	25.0	V
			I <sub>pp</sub> =5.0A, T <sub>p</sub> =8/20μs:	--	--	44.0	V
		UESD1LIN (24 V)	I <sub>pp</sub> =1.0A, T <sub>p</sub> =8/20μs:	--	--	43.0	V
			I <sub>pp</sub> =3.0A, T <sub>p</sub> =8/20μs:	--	--	70.0	V

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

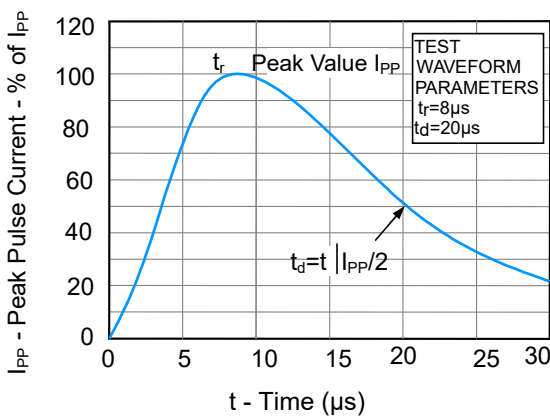


Fig2. Power Rating Derating Curve

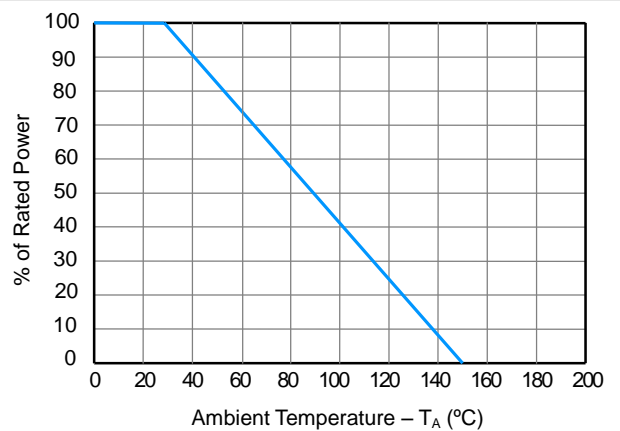
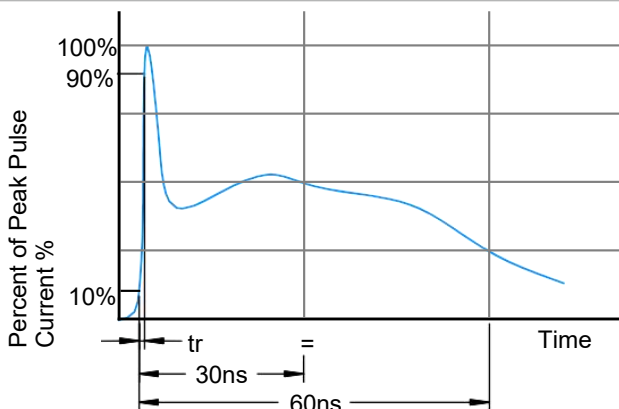
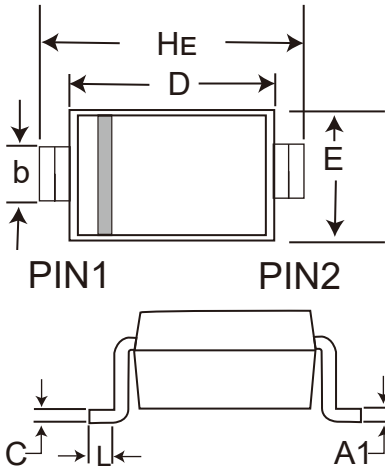


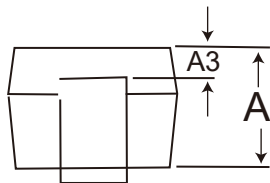
Fig3. ESD Pulse Waveform (according to IEC61000-4-2)



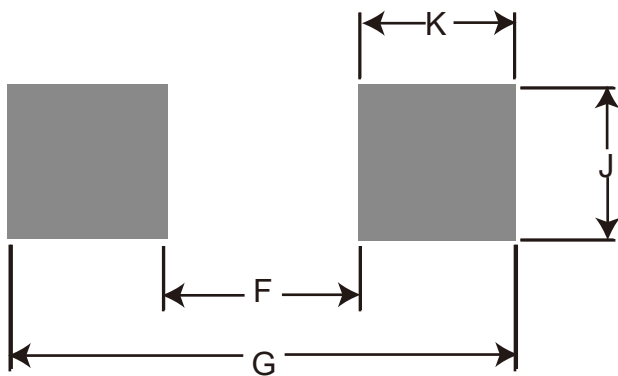
SOD-323 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15REF			0.006REF		
b	0.25	0.32	0.40	0.010	0.012	0.016
c	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
HE	2.30	2.50	2.70	0.090	0.098	0.105



Soldering Footprint



Symbol	Millimeters	Inches
F	1.60	0.063
G	2.85	0.112
J	0.83	0.033
K	0.63	0.025

Ordering Information

Device	Marking	Package	Quantity	Reel Size
UESD1LIN	UL	SOD-323	3,000pcs/Reel	7 inch

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