Transient Voltage Suppressors for ESD Protection

ESD3.3V88DS-LC

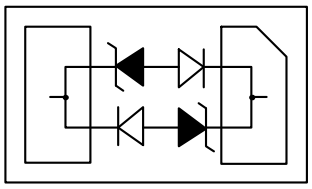
Description

The ESD3.3V88DS-LC is low capacitance TVS arrays designed to protect high speed data interfaces. This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 , It is suitable for use in automotive applications. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

Feature

- Moisture Sensitivity Level (MSL -1)
- AEC-Q101 qualified
- 182 Watts Peak Pulse Power per Line (tp=8/20μs)
- Protects One Bidirectional I/O Line
- Low clamping voltage
- Working voltage : 3.3V
- Low leakage current
- IEC61000-4-4 (EFT) 40A (5/50ηs)
- IEC61000-4-5 (LIGHTING) 13A (8/20μs)
- IEC61000-4-2(ESD):±30kV (air discharge)
  ±30kV (contact discharge)

Functional Diagram



Applications

- 10/1000 Gigabit interface
- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Peripherals
- Pagers

Mechanical Data

- SOD-882/DFN1006 (1.0x0.6x0.5mm) Package
- Molding Compound Flammability Rating : UL 94V-O
- Weight 0.5 Milligrams (Approximate)
- Lead Finish : Lead Free

Mechanical Characteristics

Symbol	Parameter	Value	Units
P_{PP}	**Peak Pulse Power (tp=8/20μs waveform)**	182	Watts
T_L	**Lead Soldering Temperature**	260 (10 sec.)	ºC
T_{STG}	**Storage Temperature Range**	-55 to +150	ºC
T_J	**Operating Junction Temperature Range**	-55 to +150	ºC

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Electrical Characteristics (@ 25℃ Unless Otherwise Specified)

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	--	--	--	3.3	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA;	4.0	--	--	V
Reverse Leakage Current	I_R	V_{RWM} =3.3V, T=25°C;	--	--	1.0	μA
Positive Clamping Voltage	V_C	I_{PP} =1A, T_P =8/20μs;	--	--	8.5	V
		I_{PP} =13A, T_P =8/20μs;	--	--	14	V
Junction capacitance	C_J	V_R = 0V, f = 1MHz;	--	1.2	--	pF

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

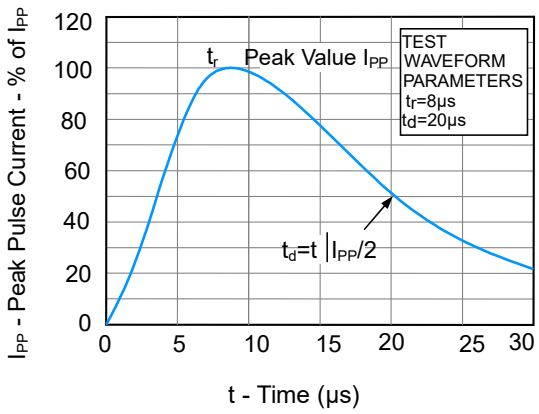
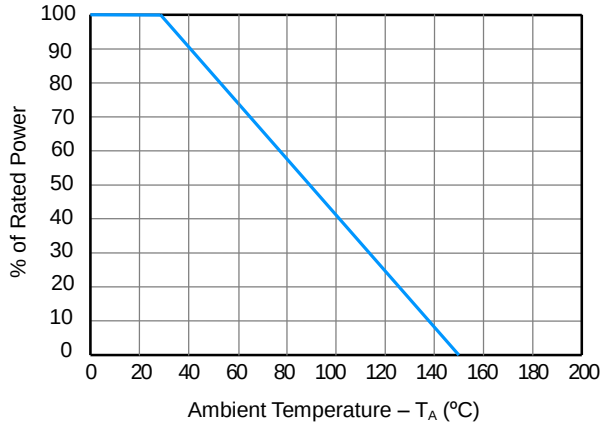


Fig2. Power Derating Curve



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Characteristic Curves

Fig3. ESD Pulse Waveform (according to IEC 61000-4-2)

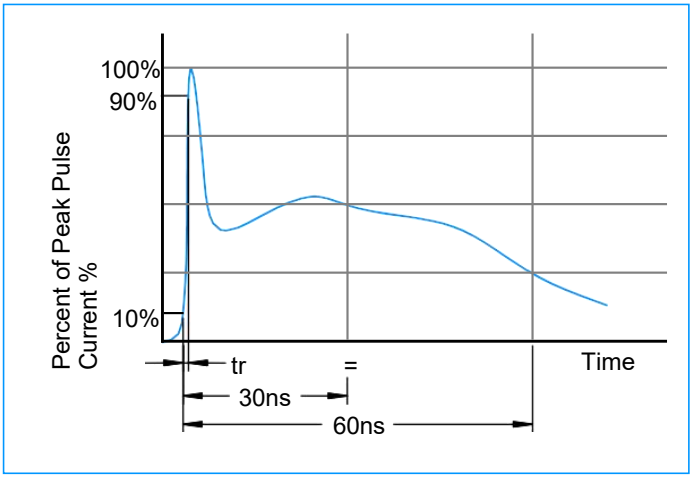


Fig4. Typic Reverse Leakage vs. Temperature

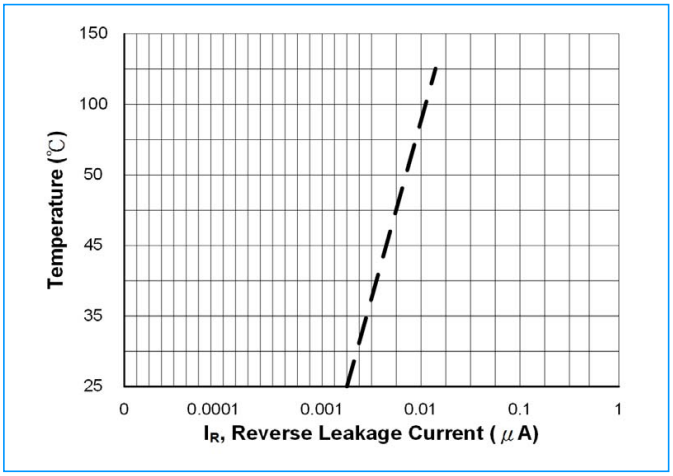


Fig5. Typic Capacitance vs. Reverse Voltage

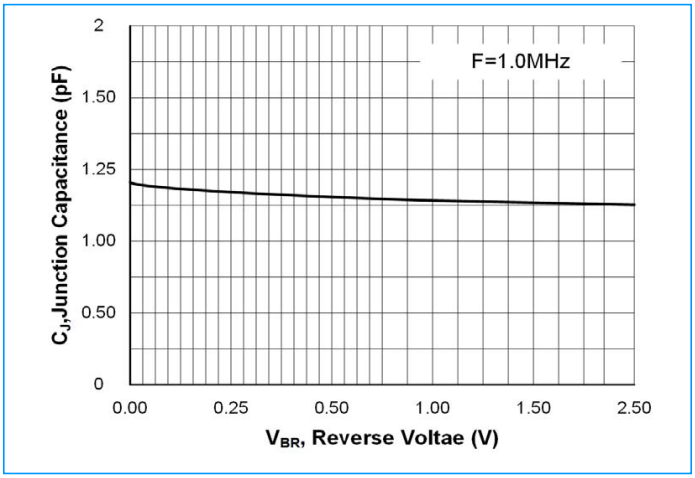
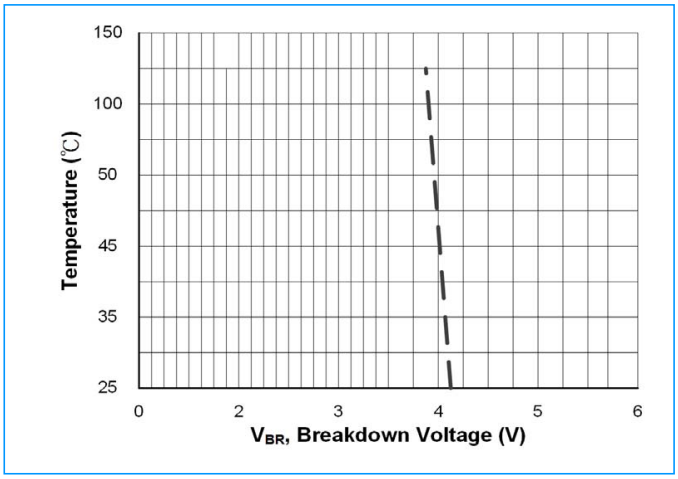


Fig6. Typic Breakdown Voltage vs. Temperature



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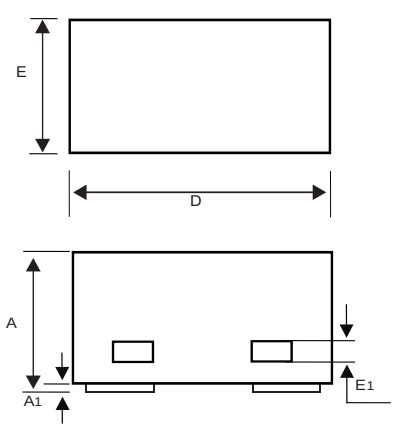
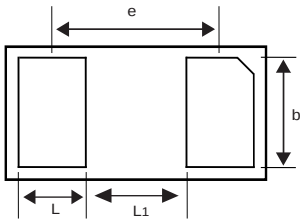
SOD-882/DFN1006 Package Outline & Dimensions

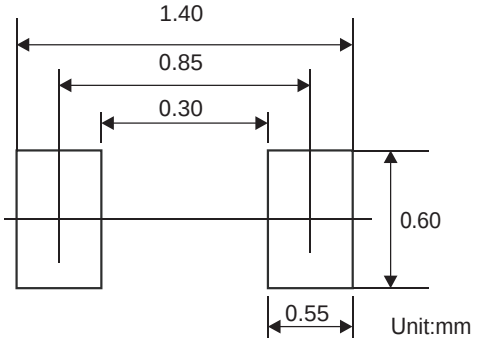
SOD-882/DFN1006





Symbol	Millimeters		
	Min	Nom	Max
A	0.450	0.500	0.550
A1	0	0.020	0.050
E1	0.013	0.063	0.113
D	0.900	1.000	1.100
E	0.500	0.600	0.700
e	0.65BSC		
L	0.150	0.250	0.350
b	0.400	0.500	0.600
L1	0.300	0.400	0.500

Suggested PAD Layout



Ordering Information

Device	Marking	Package	Quantity	Reel Size
ESD3.3V88DS-LC	LL	SOD-882/DFN1006	10,000pcs/Reel	7 inch