

Transient Voltage Suppressors for ESD Protection

ESD05V88D-NLC

Description

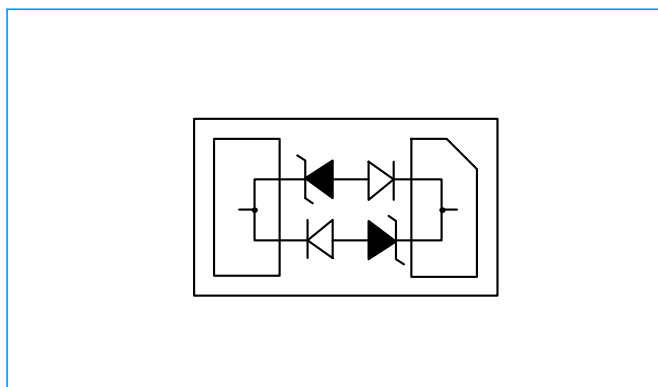
The ESD05V88D-NLC is ultra low capacitance TVS arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over-voltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).



Feature

- ◆ 75 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ◆ Protects One Bidirectional I/O Line
- ◆ Low clamping voltage
- ◆ Low Capacitance
- ◆ Working voltages : 5.0V
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (LIGHTING) 3A (8/20μs)
- ◆ IEC61000-4-2(ESD): ±15kV (air discharge)
±10kV (contact discharge)

Functional Diagram



Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ USB 3.0 / USB 3.1 Interfaces
- ◆ HDMI 1.4 / HDMI 2.0 Interfaces
- ◆ Video Graphics Cards
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Industrial Controls
- ◆ Peripherals

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 ($t_p=8/20\mu s$ waveform)	75	Watts
T_L	Lead Soldering Temperature	260 (10 sec.)	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_J	Operating Junction Temperature Range	-40 to +125	°C

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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	--	--	--	5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA;$	7.0	8.0	9.0	V
Reverse Leakage Current	I_R	$V_{RWM}=5.0V, T=25^{\circ}C;$	--	--	0.1	μA
Positive Clamping Voltage	V_C	$I_{PP}=1A, T_P=8/20\mu s;$	--	--	15	V
		$I_{PP}=3A, T_P=8/20\mu s;$	--	20	25	V
Junction capacitance	C_J	$V_R=0V, f=1MHz;$	--	0.20	0.35	pF

Characteristic Curves

Fig1. 8/20 μs Pulse Waveform

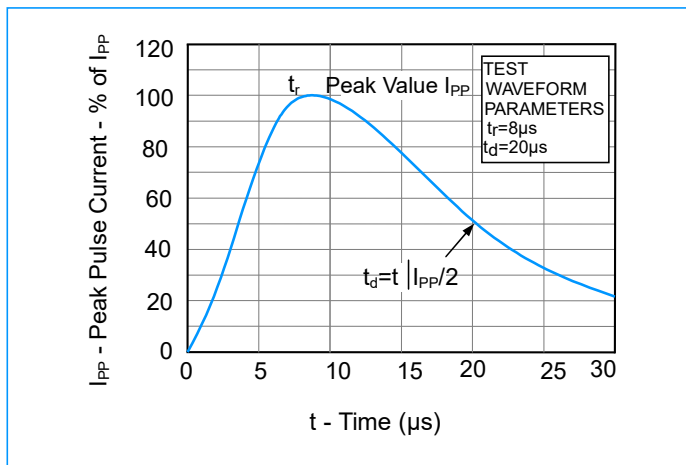


Fig2. Power Derating Curve

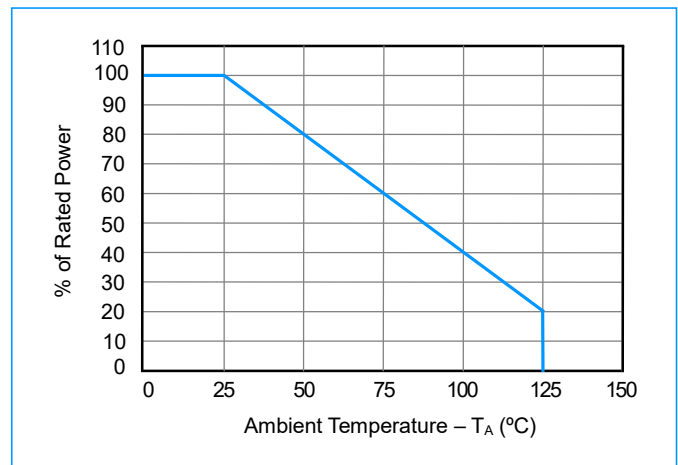


Fig3. Clamping Voltage vs. Peak Pulse Current

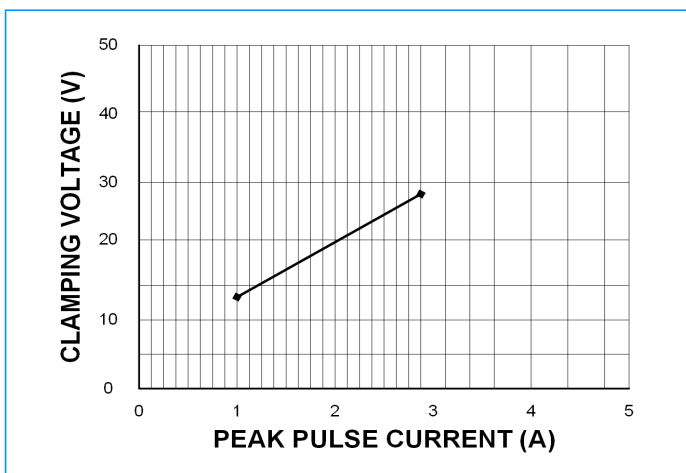
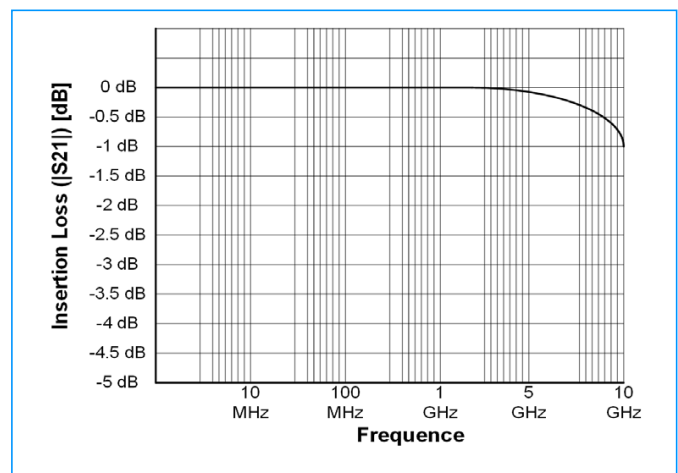


Fig4. Insection Loss (S21)

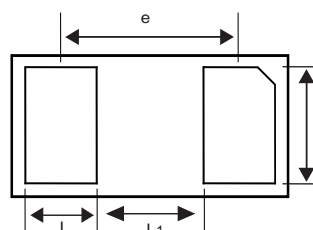
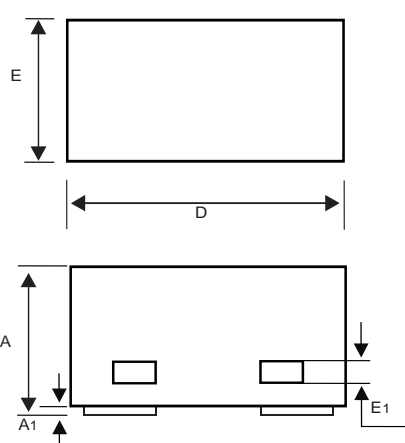


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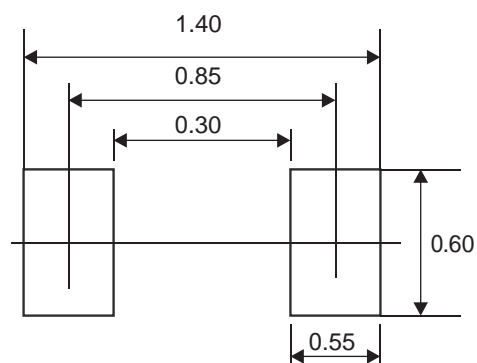
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SOD-882/DFN1006 Package Outline & Dimensions

SOD-882/DFN1006



Suggested PAD Layout



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

Ordering Information

Device	Marking	Package	Quantity	Reel Size
ESD05V88D-NLC	NL	SOD-882/DFN1006	10,000pcs/Reel	7 inch