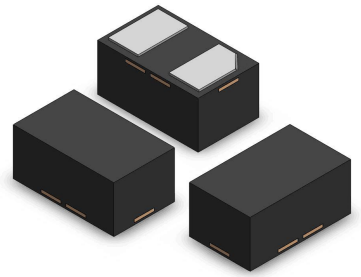
Transient Voltage Suppressors for ESD Protection

ESD05V88D-SLC

Description

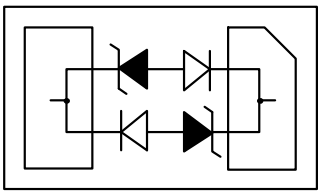
The ESD05V88D-SLC is low capacitance TVS designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over-voltage caused by ESD (electrostatic discharge), CDE (Cable Discharge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



Feature

- 210 Watts Peak Pulse Power per Line (tp=8/20μs)
- Protects One Bidirectional I/O Line
- Working voltages : 5.0V
- Low clamping voltage
- Low leakage current
- Ultra-low capacitance
- IEC61000-4-2(ESD):±30kV (air discharge)
  ±30kV (contact discharge)
- IEC61000-4-4 (EFT): 40A (5/50ηs)
- IEC61000-4-5(SURGE): 15A (8/20μs)

Functional Diagram



Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Peripherals
- Personal Digital Assistants

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)**	210	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**	-40 to +125	ºC

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Electrical Characteristics (@ 25℃ 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	6.0	8.0	--	V
Reverse holding Voltage	V_{HOLD}	I_{HOLD} = 500mA	5.0	7.0	--	V
Reverse Leakage Current	I_R	V_{RWM}=5.0V；T=25° C	--	＜1	50.0	nA
Positive Clamping Voltage	V_C	I_{PP} =1.0A，T_P =8/20μs；	--	8.0	10.0	V
		I_{PP} =15.0A，T_P =8/20μs；	--	12.0	14.0	V
TLP Clamping Voltage	V_{CL}	I_{PP} =16.0A，T_P =100ns；	--	12.0	--	V
Dynamic resistance	R_{DYN}	--	--	0.30	--	Ω
Junction capacitance	C_J	V_R = 0V, f = 1MHz	--	1.35	1.55	pF

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

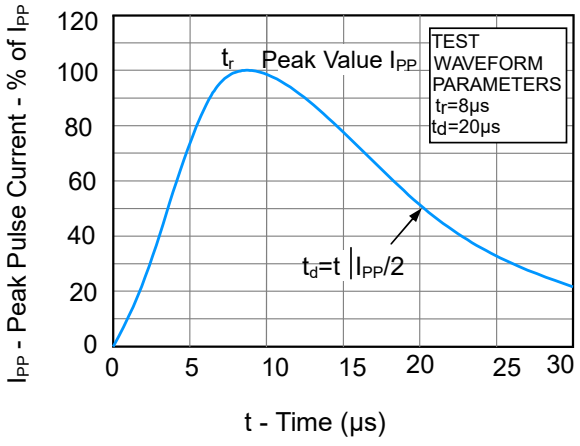
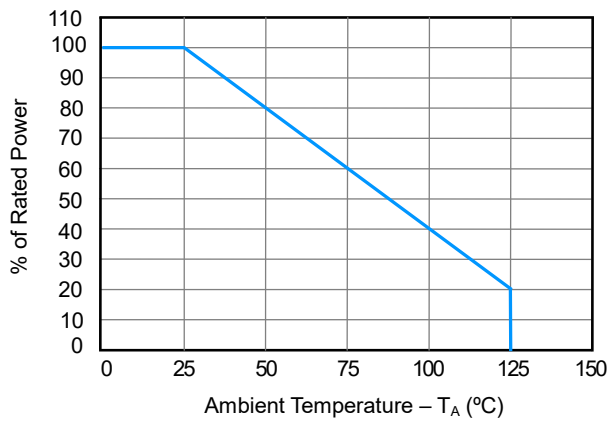


Fig2. Power Derating Curve



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Characteristic Curves

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

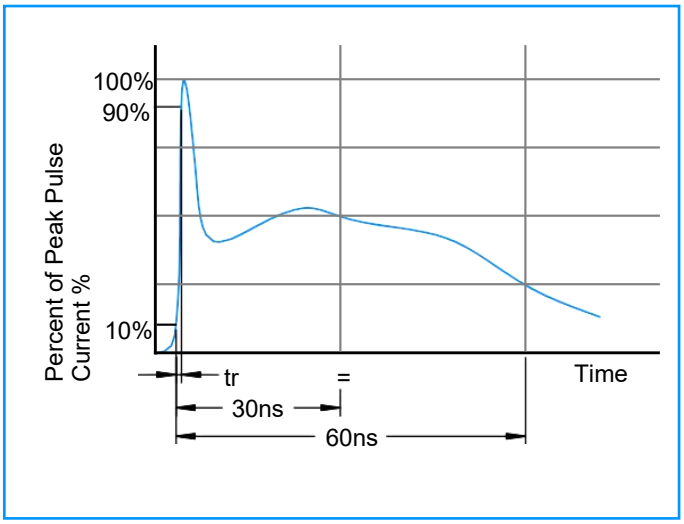
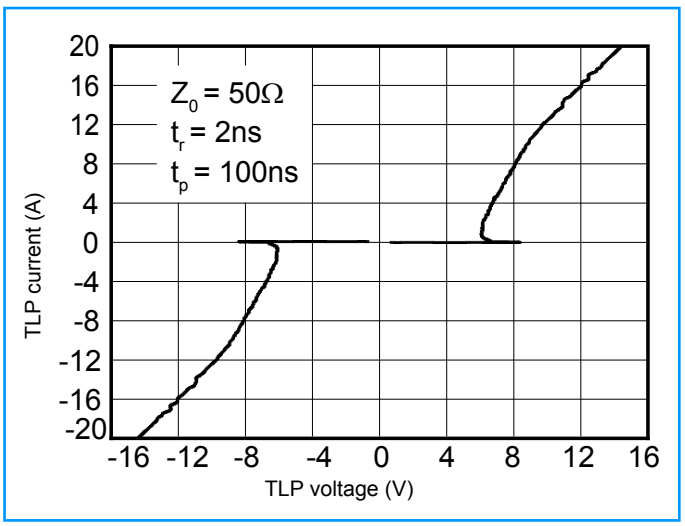
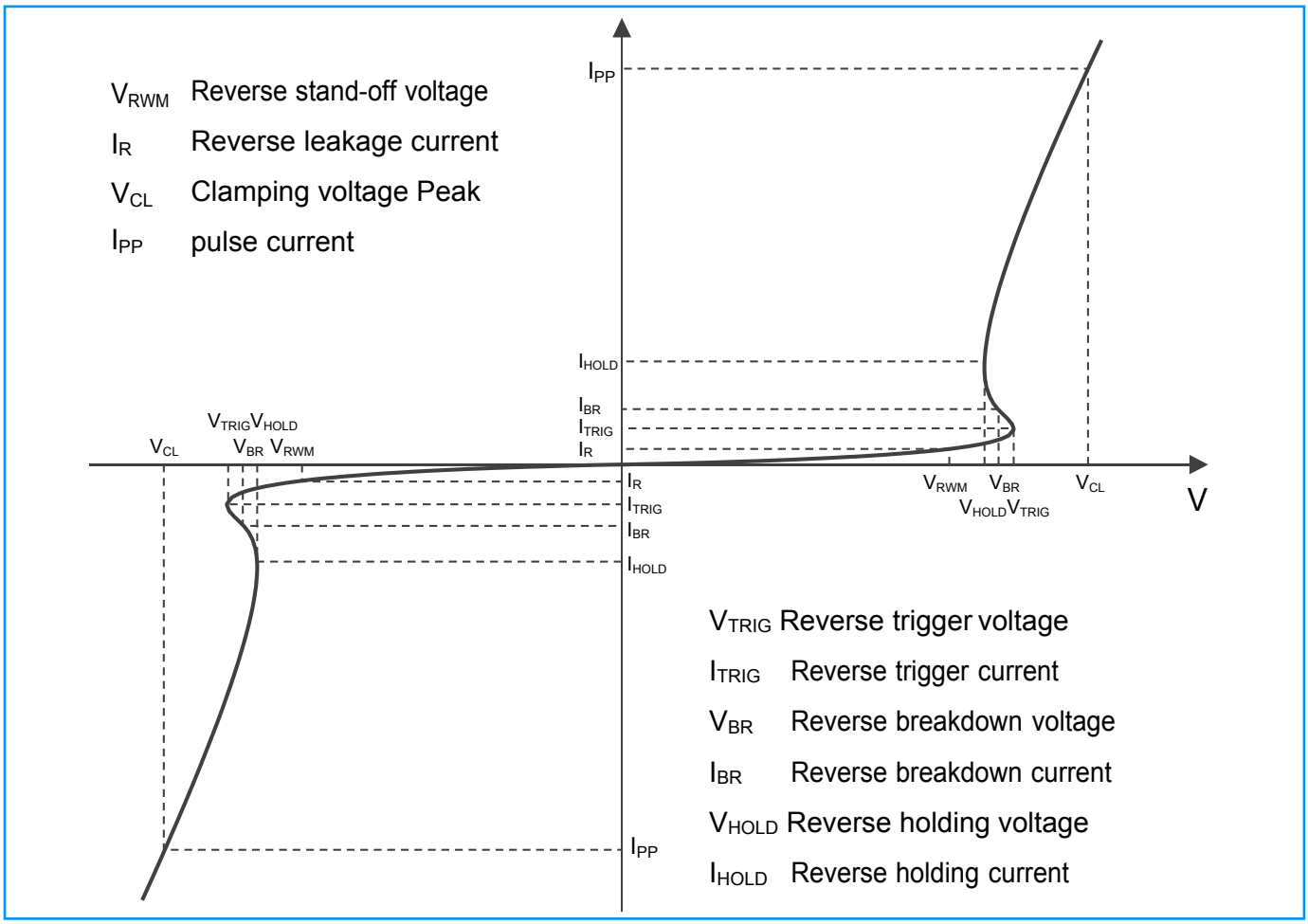


Fig4. TLP Measurement



Definitions of electrical characteristics



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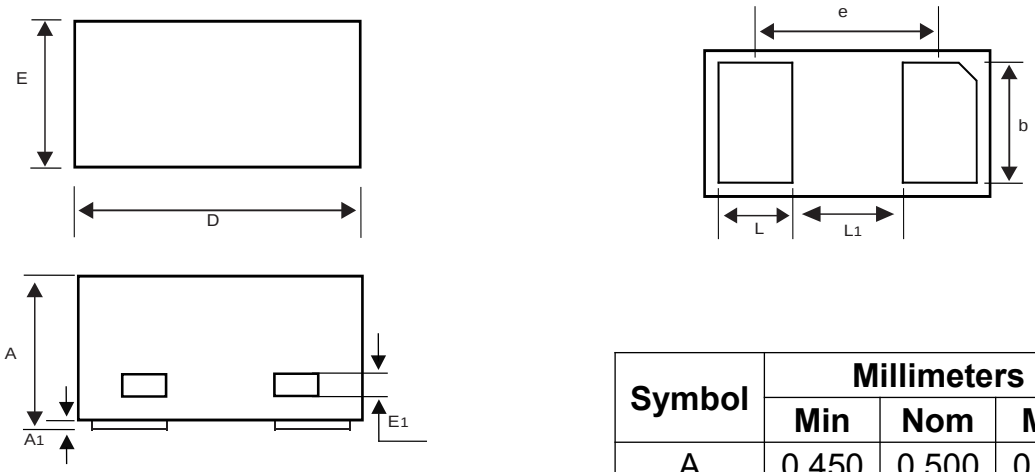
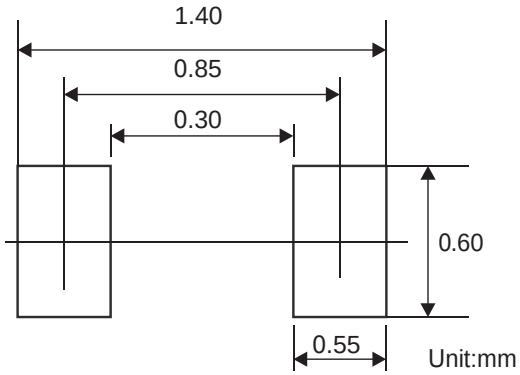
SOD-882/DFN1006 Package Outline & Dimensions

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
ESD05V88D-SLC	5S	SOD-882/DFN1006	10,000pcs/Reel	7 inch

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