

# ESD05V88D-ULC

ROHS

## Transient Voltage Suppressors for ESD Protection

### Description

The ESD05V88D-ULC 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)

### Features

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

### 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 Characteristics

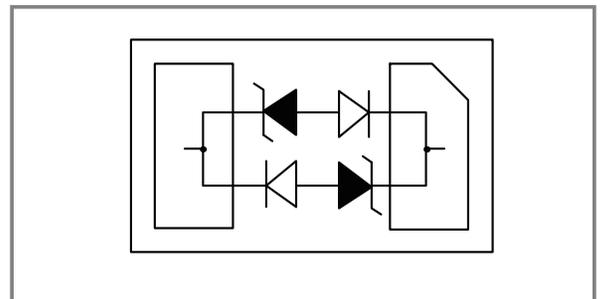
Parameter	Symbol	Value	Units
Peak Pulse Power ( $t_p=8/20\mu s$ waveform)	P <sub>PP</sub>	90	Watts
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C
Operating Junction Temperature Range	T <sub>J</sub>	-40 to +125	°C



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### Functional Diagram



### Mechanical Data

- ◆ SOD-882/DFN1006 (1.0x0.6x0.5mm) Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 0.5 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

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	$V_{BR}$	$I_T=1mA;$	6.0	--	--	V
Reverse Leakage Current	$I_R$	$V_{RWM}=5.0 V, T=25^{\circ}C;$	--	--	1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP}=1A, T_P = 8/20\mu s;$	--	--	15	V
		$I_{PP}=3A, T_P = 8/20\mu s;$	--	18	30	V
Junction Capacitance	$C_J$	$V_R = 0 V, f = 1MHz ;$	--	0.25	--	pF

Characteristic Curves

Fig1. 8/20 $\mu s$  Pulse Waveform

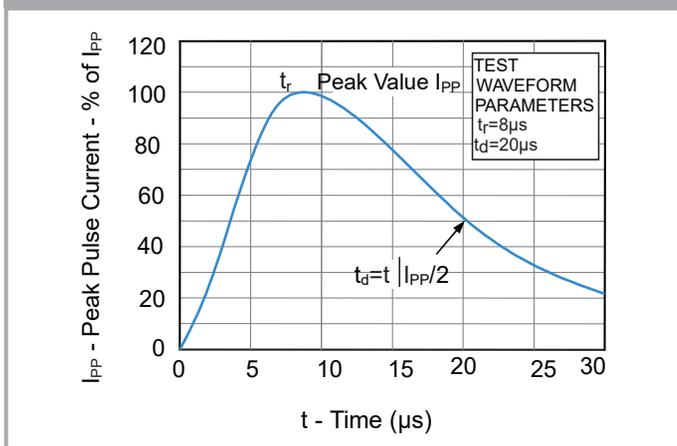


Fig2. Power Derating Curve

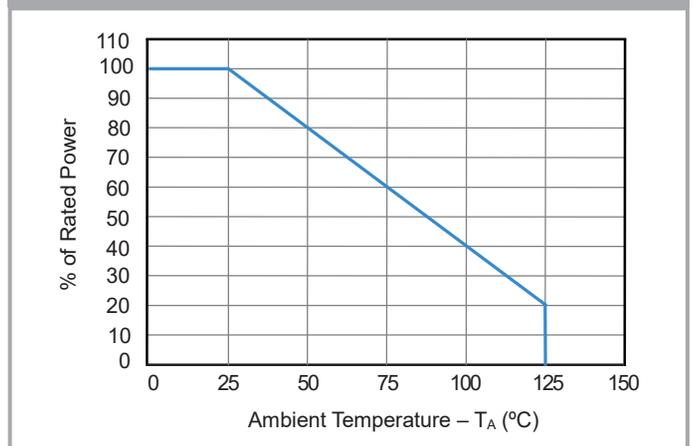


Fig3. Clamping Voltage vs. Peak Pulse Current

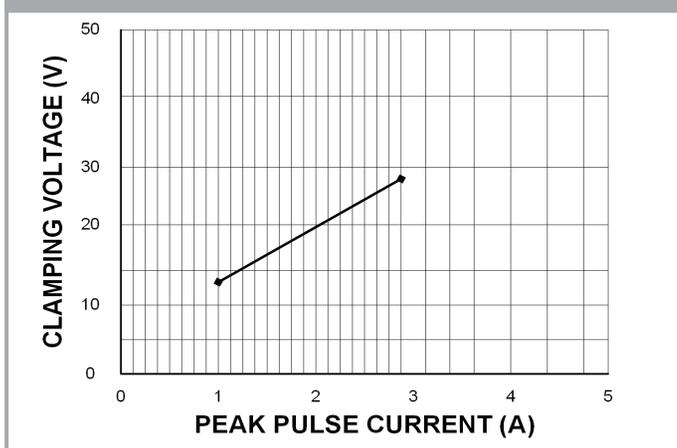
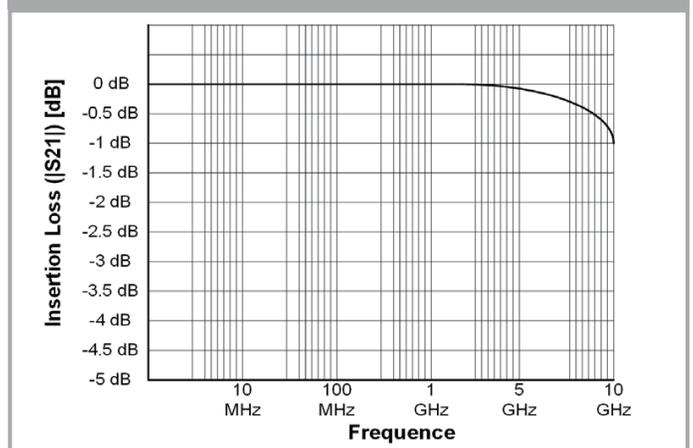
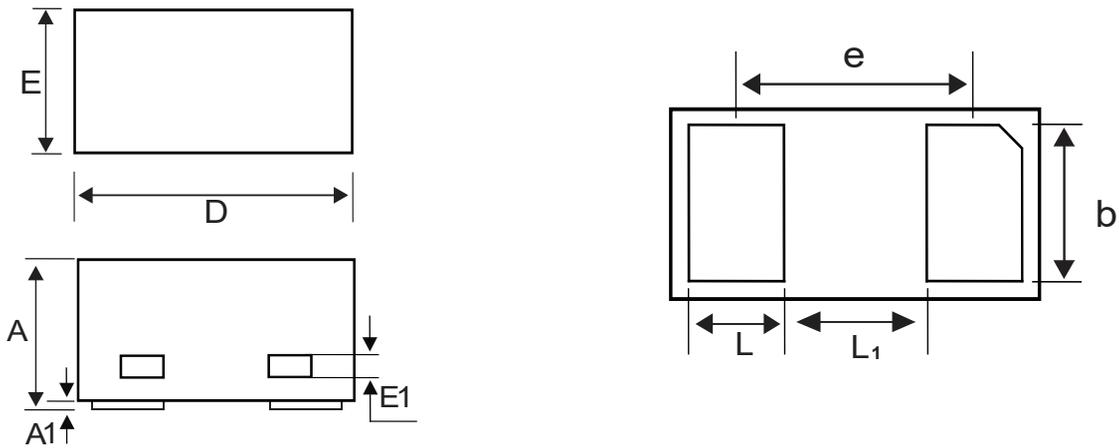


Fig4. Inseccion Loss (S21)

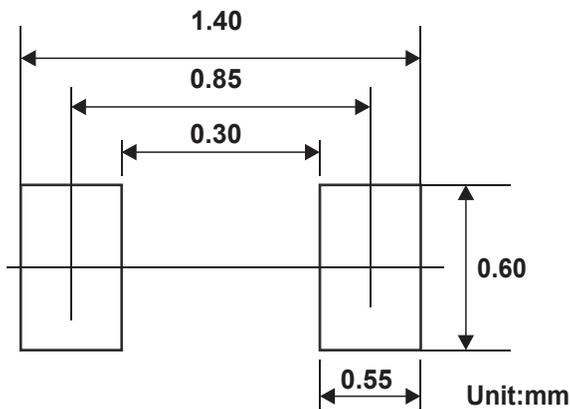


**SOD-882/DFN1006 Package Outline & Dimensions**

**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-ULC	HA	SOD-882/DFN1006	10,000pcs/Reel	7 inch

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