

## Transient Voltage Suppressors for ESD Protection

### ESD05V88D-LC

#### Description

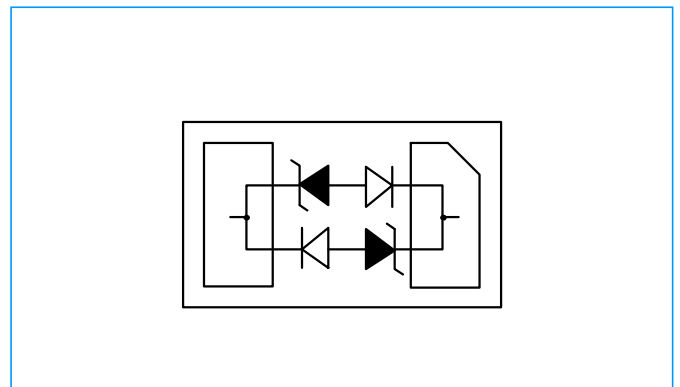
The ESD05V88D-LC is low capacitance TVS arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over-voltage caused by ESD (electrostatic discharge), CDE (Cable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



#### Feature

- ◆ 100 Watts Peak Pulse Power per Line (tp=8/20μs)
- ◆ Protects One Bidirectional I/O Line
- ◆ Low clamping voltage
- ◆ Low Capacitance
- ◆ Working voltages : 5.0V
- ◆ IEC61000-4-2(ESD):±20kV (air discharge)  
±15kV (contact discharge)

#### Functional Diagram



#### Applications

- ◆ Cellular Handsets & Accessories
- ◆ Digital Visual Interface (DVI)
- ◆ RF Circuits
- ◆ Display Port
- ◆ USB Ports
- ◆ MDDI Ports
- ◆ PCI Express

#### 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
<b>P<sub>PP</sub></b>	<b>Peak Pulse Power (tp=8/20μs waveform)</b>	100	Watts
<b>T<sub>L</sub></b>	<b>Lead Soldering Temperature</b>	260 (10 sec.)	°C
<b>T<sub>STG</sub></b>	<b>Storage Temperature Range</b>	-55 to +150	°C
<b>T<sub>J</sub></b>	<b>Operating Junction Temperature Range</b>	-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	$V_{BR}$	$I_T=1mA$ ;	6.0	--	--	V
Reverse Leakage Current	$I_R$	$V_{RWM}=5.0V$ , $T=25^{\circ}C$ ;	--	--	1.0	$\mu A$
Positive Clamping Voltage	$V_C$	$I_{PP}=1A$ , $T_P=8/20\mu s$ ;	--	--	12	V
		$I_{PP}=4A$ , $T_P=8/20\mu s$ ;	--	20	25	V
Junction capacitance	$C_J$	$V_R=0V$ , $f=1MHz$ ;	--	0.3	0.5	pF

#### Characteristic Curves

Fig1. 8/20 us Pulse Waveform

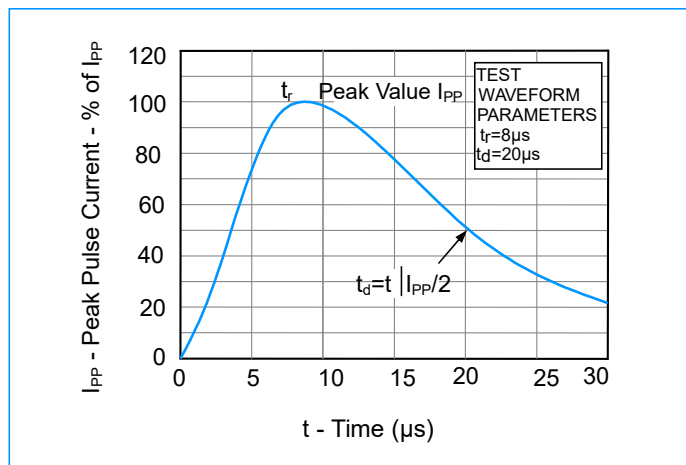
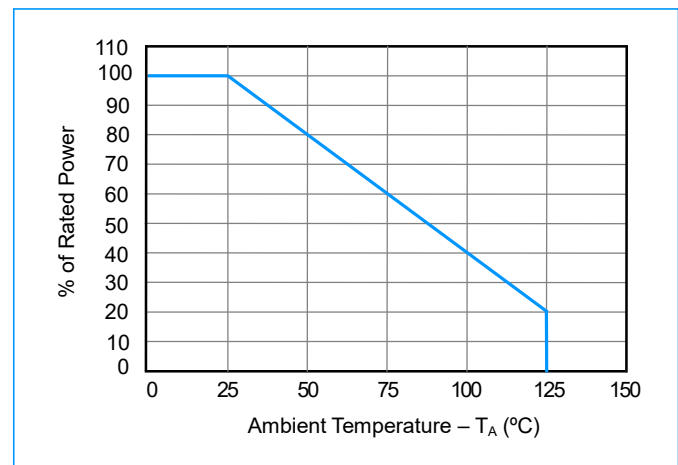


Fig2. Power Derating Curve



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#### Characteristic Curves

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

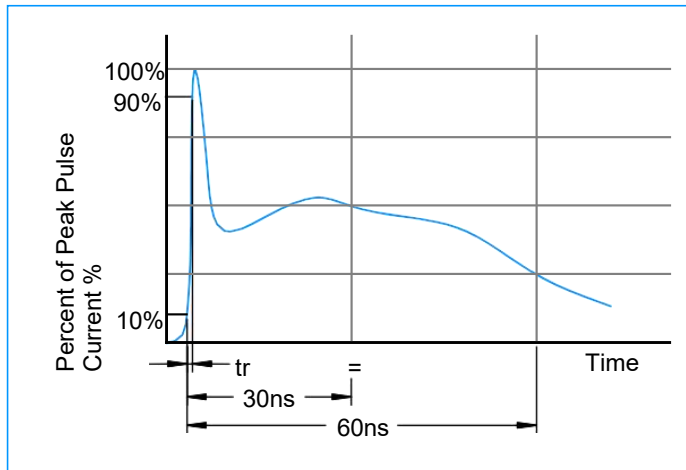


Fig4. Power Dissipation Vs Pulse Time

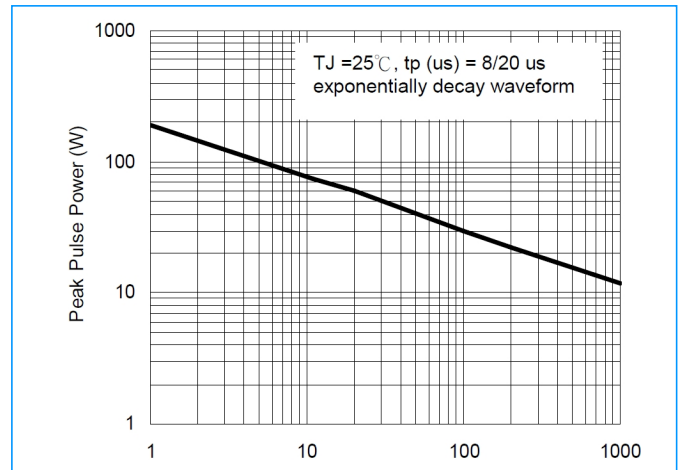


Fig5. Typical Junction Capacitance

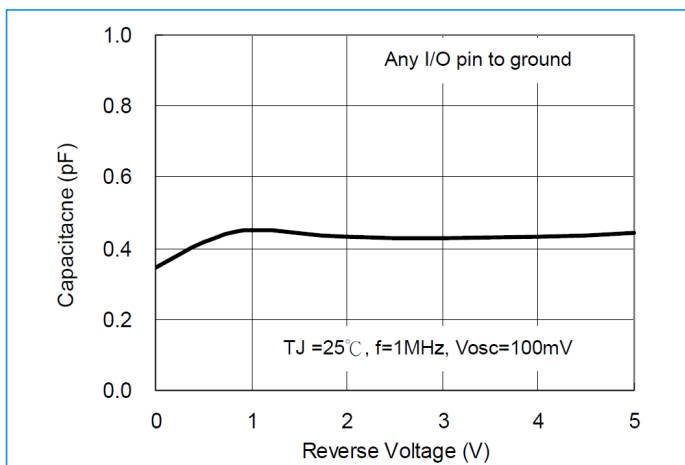
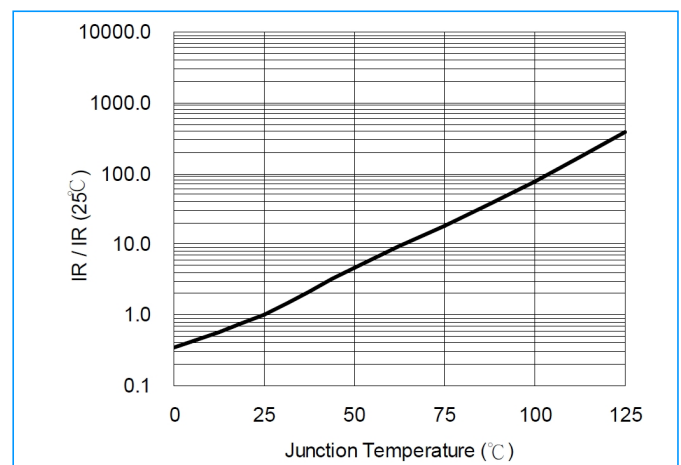


Fig6. Reverse Leakage Current Versus  $T_J$

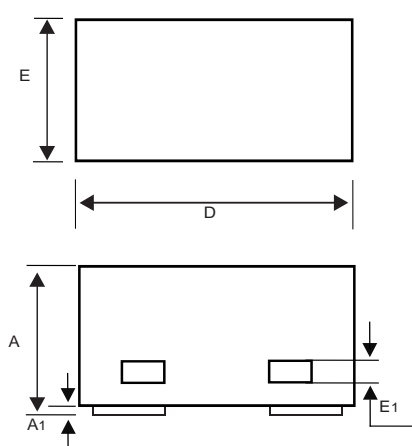


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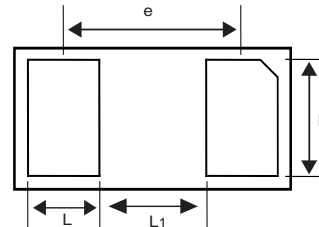
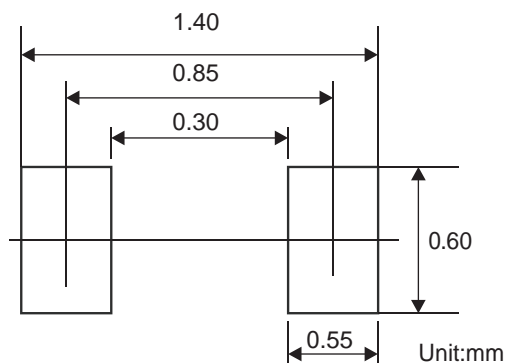
### ESD05V88D-LC

#### 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-LC	JJ	SOD-882/DFN1006	10,000pcs/Reel	7 inch