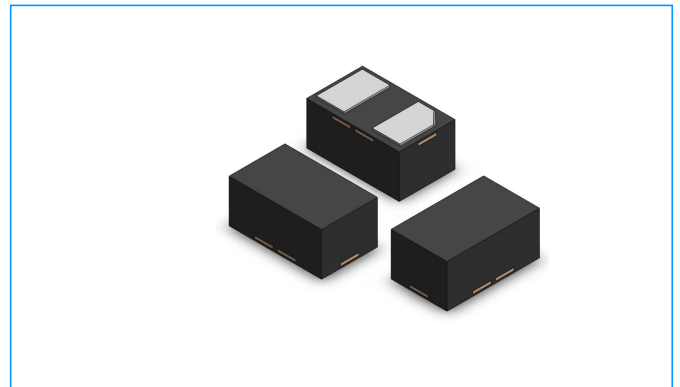


Transient Voltage Suppressors for ESD Protection

ESD05V88D-CP

Description

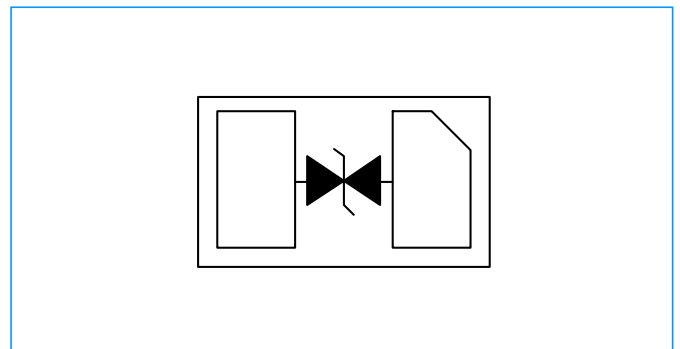
The ESD05V88D-CP is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.



Feature

- ◆ 80 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) 8A (8/20 μs)
- ◆ IEC61000-4-2(ESD): $\pm 30kV$ (air discharge)
 $\pm 30kV$ (contact discharge)

Functional Diagram



Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Personal Digital Assistants
- ◆ 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)	80	Watts
T_L	Lead Soldering Temperature	260 (10 sec.)	$^{\circ}C$
T_{STG}	Storage Temperature Range	-55 to +150	$^{\circ}C$
T_J	Operating Junction Temperature Range	-40 to +125	$^{\circ}C$

Transient Voltage Suppressors for ESD Protection

ESD05V88D-CP

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}	$I_T=1mA$;	5.1	--	--	V
Reverse Leakage Current	I_R	$V_{RWM}=5.0V$, $T=25^{\circ}C$;	--	--	0.1	μA
Positive Clamping Voltage	V_C	$I_{PP}=1A$, $T_P=8/20\mu s$;	--	--	6.5	V
		$I_{PP}=5A$, $T_P=8/20\mu s$;	--	--	8.5	V
		$I_{PP}=8A$, $T_P=8/20\mu s$;	--	--	10.0	V
Junction capacitance	C_J	$V_R=0V$, $f=1MHz$;	--	15	20	pF

Characteristic Curves

Fig1. 8 x 20 μs Pulse Waveform

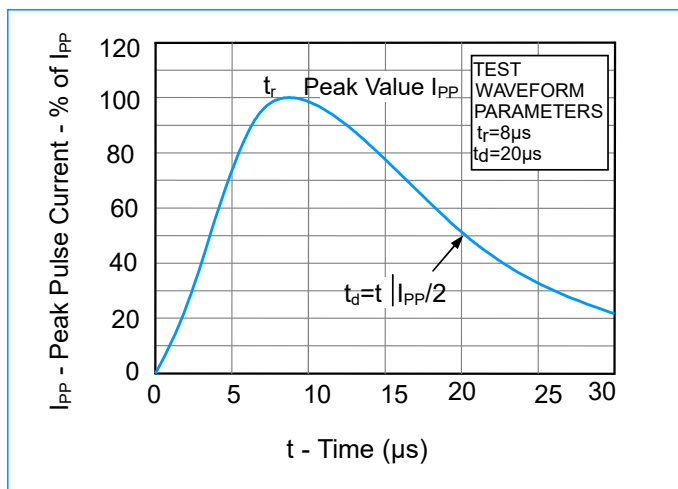


Fig2. Power Derating Curve

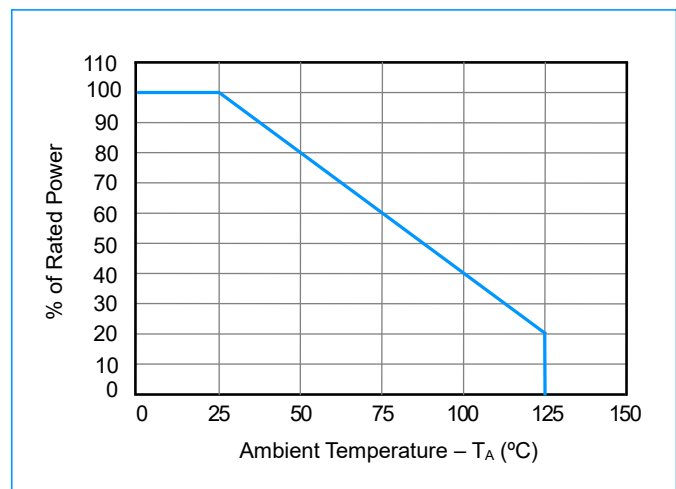
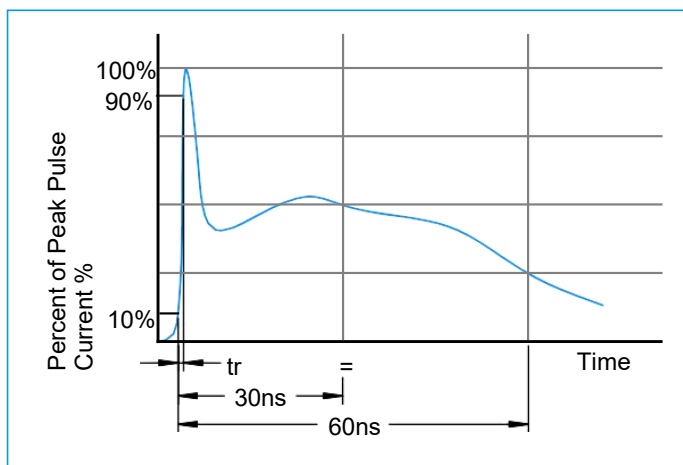


Fig3. ESD Pulse Waveform (according to IEC 61000-4-2)

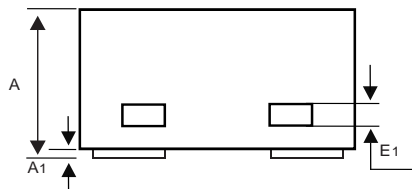
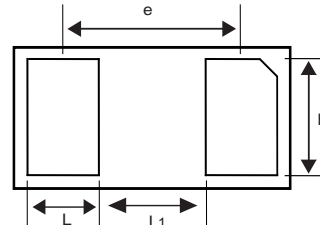
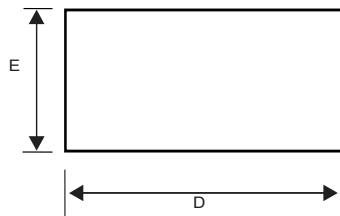


Transient Voltage Suppressors for ESD Protection

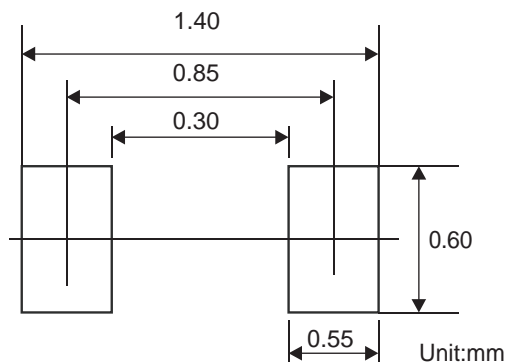
ESD05V88D-CP

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-CP	PB	SOD-882/DFN1006	10,000pcs/Reel	7 inch