

Transient Voltage Suppressors for ESD Protection

ESD3.3V02D-CP

Description

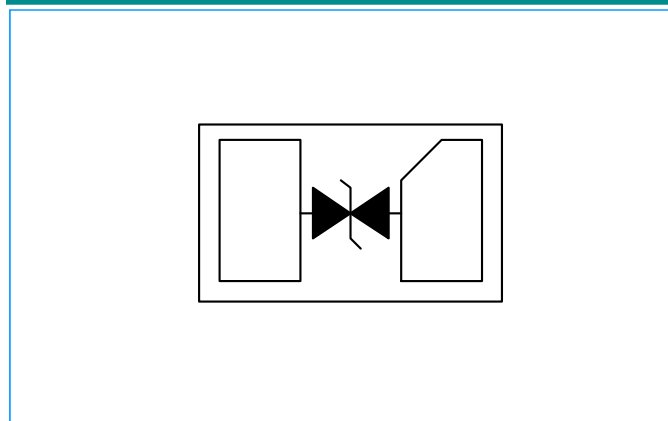
The ESD3.3V02D-CP is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.



Feature

- ◆ Unidirectional ESD protection
- ◆ Low Clamping Voltage
- ◆ Surface mount package.
- ◆ Ultra small SMD package.
- ◆ Stand-off Voltage: 3.3 V
- ◆ Low leakage current
- ◆ High component density.
- ◆ Provides ESD protection to IEC61000-4-2(ESD):
 $\pm 30\text{kV}$ (air discharge)
 $\pm 30\text{kV}$ (contact discharge);

Functional Diagram



Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ I²C Bus Protection
- ◆ Personal Digital Assistants (PDA)
- ◆ Notebooks, Desktops, and Servers
- ◆ Micro controller Input Protection
- ◆ Peripherals
- ◆ Parallel & Serial Port Protection

Mechanical Data

- ◆ Case: 0201/DFN0603 package,molded plastic.
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 0.3 Milligrams (Approximate)
- ◆ Mounting position: Any

Mechanical characteristics

Symbol	Parameter	Value	Units
P _{PP}	Peak Pulse Power (Tp=8/20μs waveform)	70	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

Transient Voltage Suppressors for ESD Protection

ESD3.3V02D-CP

Electrical Characteristics(@25°C Unless Otherwise Specified)

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	--	--	3.3	--	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	--	4.5	--	V
Reverse Leakage Current	I_R	$V_{RWM}=3.3V$; $T=25^\circ C$	--	--	0.8	μA
Junction capacitance	C_J	$V_R=0V$, $f=1MHz$	--	--	17	pF
Positive Clamping Voltage	V_C	$I_{PP}=9A$, $T_P=8/20\mu s$	--	--	70	V
TLP Clamping Voltage	V_{CL}	$I_{PP}=1A$	--	--	6.5	V
		$I_{PP}=8A$	--	--	13	V
		$I_{PP}=16A$	--	--	19.5	V

Characteristic Curves

Fig1. 8/20 μs Pulse Waveform

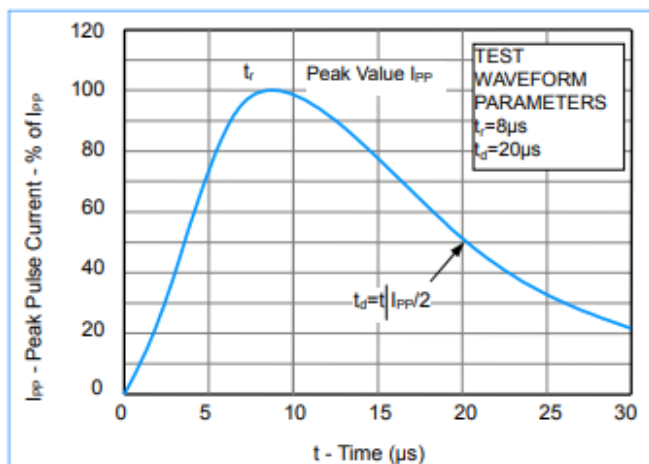


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

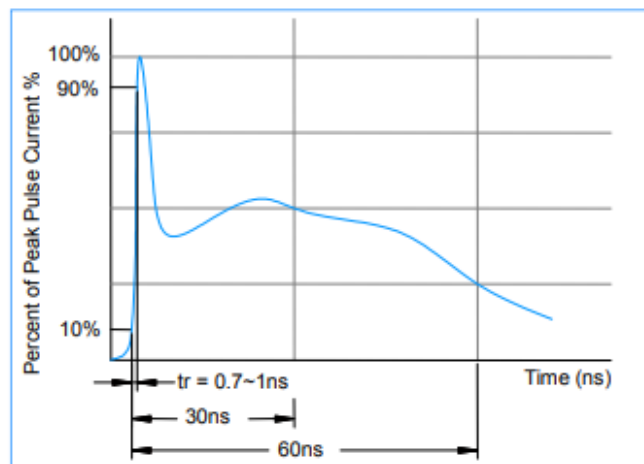


Fig3. Power Rating Derating Curve

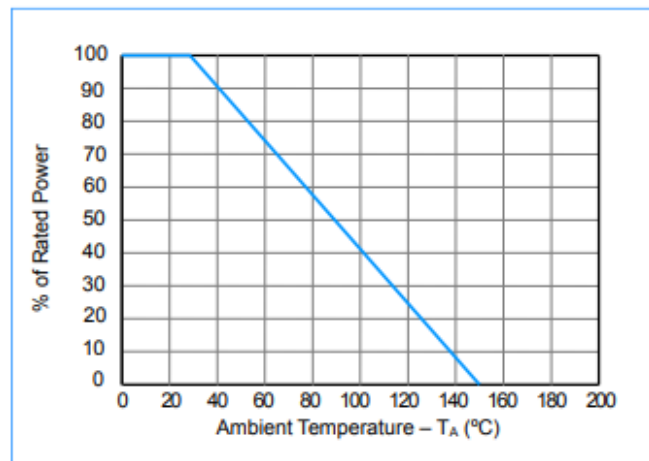
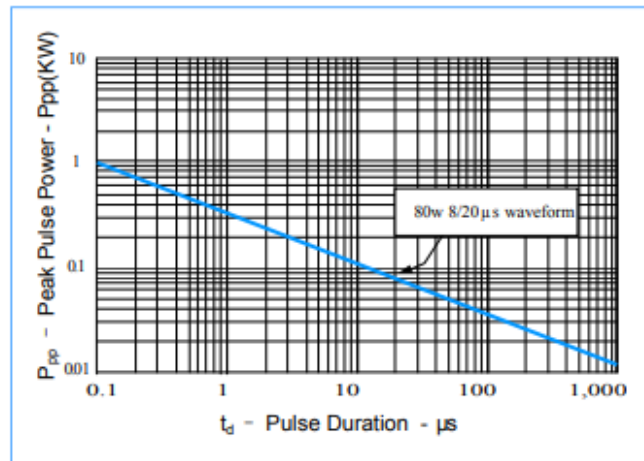


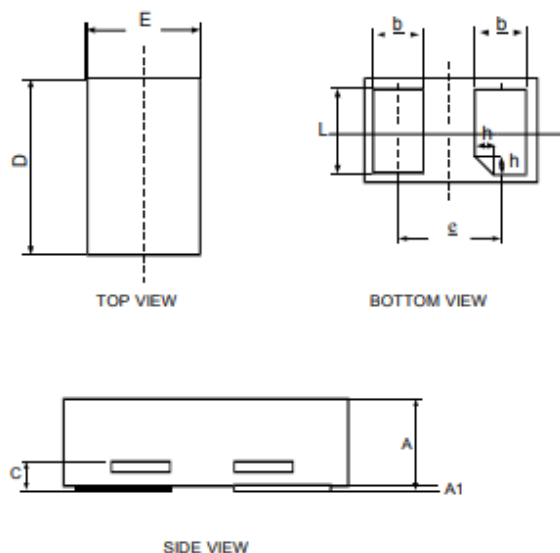
Fig4. Peak Pulse Power vs. Pulse Time



Transient Voltage Suppressors for ESD Protection

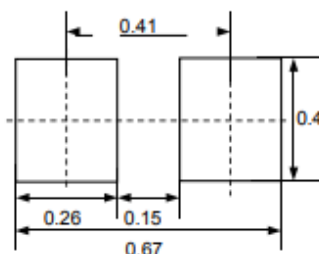
ESD3.3V02D-CP

0201/DFN0603 Package Outline&Dimensions



Symbol	Dimensions in millimeters		
	Min	Nom	Max
A	0.28	0.30	0.32
A1	0.00	0.02	0.05
C	0.05	0.10	0.15
D	0.55	0.60	0.65
E	0.25	0.30	0.35
e	0.34	0.35	0.37
b	0.14	0.19	0.24
L	0.20	0.25	0.30
h	0	0.05	0.10

Land Pattern



Ordering Information

Device	Marking	Package	Quantity	Reel Size
ESD3.3V02D-CP	B	0201/DFN0603	10,000pcs/Reel	7 inch