

Transient Voltage Suppressors for ESD Protection

ESD05V02D-NC

Description

The ESD05V02D-NC 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).

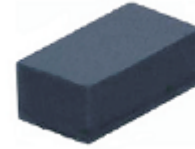
Feature

- ◆ 30 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ◆ Surface mount package
- ◆ Low clamping voltage
- ◆ Working voltages : 5V
- ◆ Low leakage
- ◆ IEC61000-4-2 (ESD) Level 4 ESD protection
- ◆ Ultra small SMD package:0201

Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ Pagers

0201/DFN0603



Functional Diagram



Standard Packaging

Case Type	Qty Per Reel	Reel Size
	(Pcs)	(inch)
0201(DFN0603)	8,000	7

Mechanical Data

- ◆ Case:0201/DFN0603 Package molded plastic.
- ◆ Terminals: Gold plated, solderable per MIL-STD-750, Method 2026.
- ◆ Polarity: Color band denotes cathode end.
- ◆ Mounting position: Any
- ◆ Reel Size : 7 inch

Mechanical Characteristics

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power ($t_p=8/20\mu s$ waveform)	30	W
I_{PP}	Peak Pulse Current ($t_p=8/20\mu s$ waveform)	2.0	A
T_J	Operating Junction Temperature Range	-55 to +125	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_L	Soldering Temperature, $t_{max} = 10s$	260	°C
	IEC61000-4-2 (ESD)		
	Air Discharge	16	KV
	Contact Discharge	8	

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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	V
Reverse Breakdown Voltage	V_{BR}	$I_t=1mA$	5.5	--	--	V
Reverse Leakage Current	I_R	$V_{RWM}=5V ; T=25^{\circ}C$	--	--	100	nA
Positive Clamping Voltage	V_{C1}	$I_{PP}=1A , t_p=8/20\mu S ;$ Positive pulse;	--	--	12	V
Capacitance Between I/O And GND	C_{J2}	$V_R=0V , f=1MHz ;$	--	6	--	pF

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

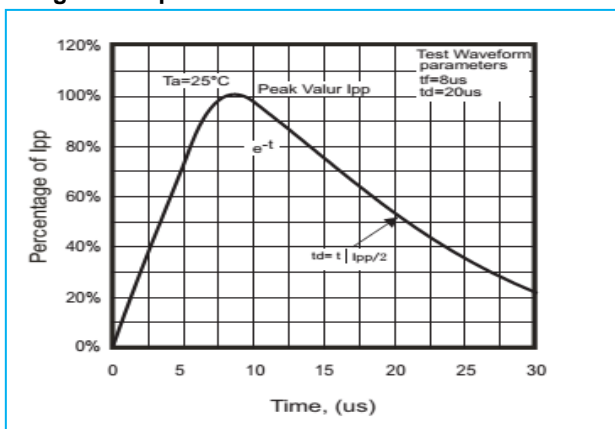


Fig2.ESD Pulse Waveform (according to IEC 61000-4-2)

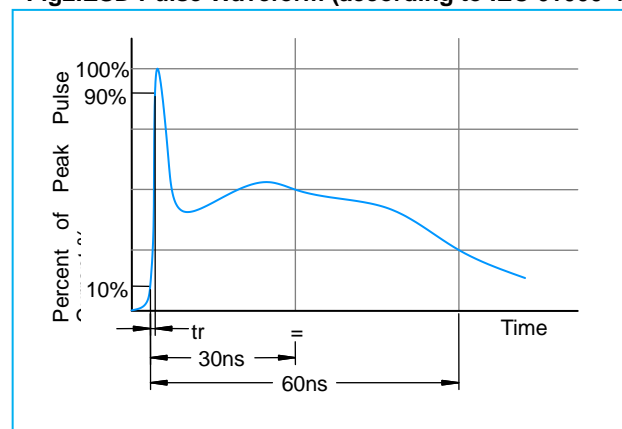
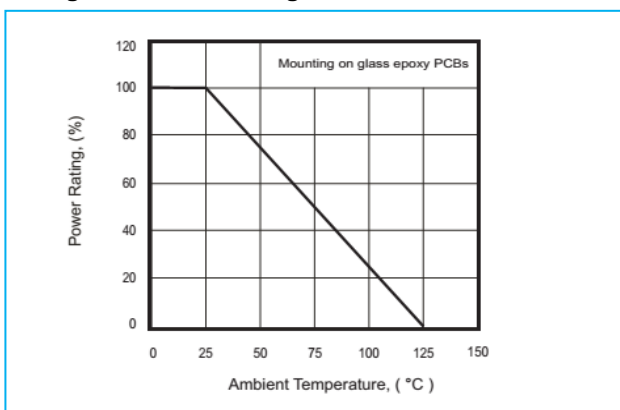


Fig3. Power Derating Curve



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Characteristic Curves

Fig4. Clamping Voltage Vs. Peak Pulse Current

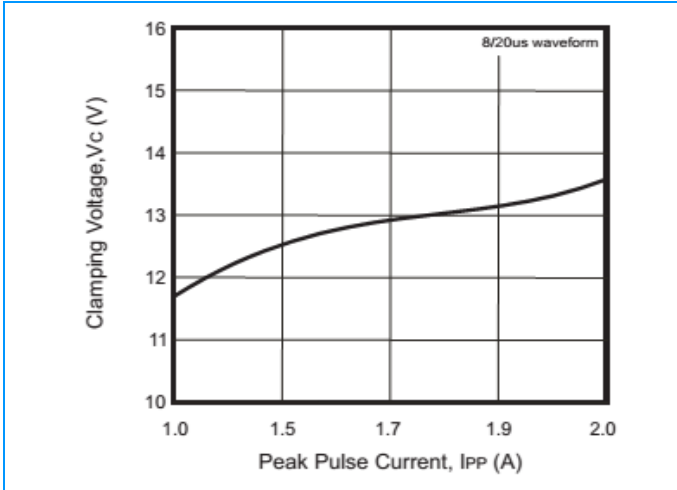
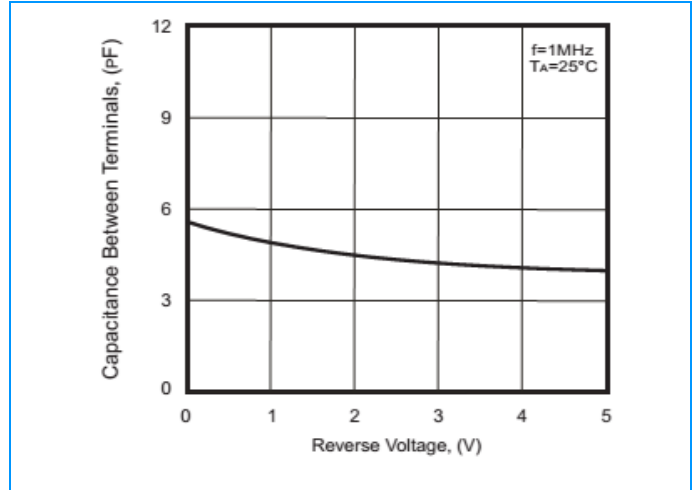
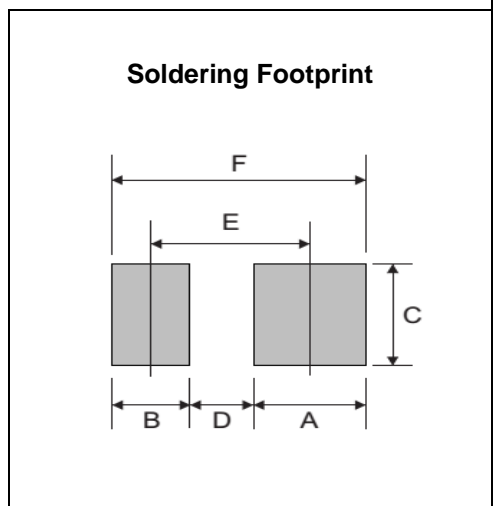
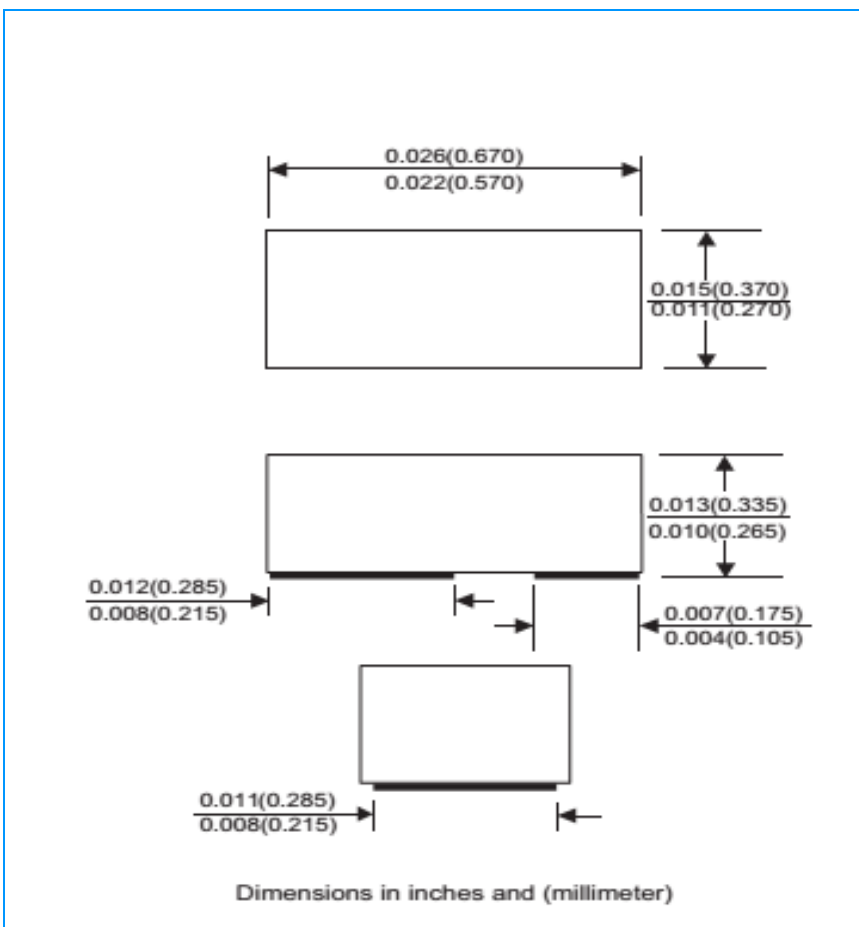


Fig5. Capacitance Between Terminals Characteristics



0201/DFN0603 Package Outline & Dimensions



Symbol	Inches	Millimeters
A	0.012	0.31
B	0.008	0.20
C	0.014	0.35
D	0.006	0.15
E	0.016	0.40
F	0.026	0.66