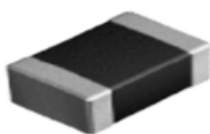


Description

The PVS series are designed to protect sensitive electronic equipment against extreme ESD conditions, in very small 0402 and 0603 footprints. This product series is specifically designed to suppress fast-rising ESD transients up to 30KV while adding virtually no capacitance to the circuit, which helps preserve signal integrity and minimize data loss.



Features

- ◆ IEC 61000-4-2 (ESD)
 - ±8kV Contact Discharge
 - ±15kV Air Discharge
- ◆ ISO 10605(ESD)
 - ±25kV Contact Discharge
 - ±25kV Air Discharge
- ◆ Halogen free and RoHS compliant
- ◆ Protects one directional I/O line
- ◆ Transient protection for high-speed data lines
- ◆ Ultra-low capacitance: 0.05pF(typ.)
- ◆ Low leakage current

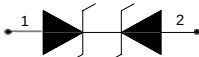
Mechanical Data

- ◆ USB3.0/3.1
- ◆ HDMI 1.3/1.4/2.0
- ◆ RF Antenna
- ◆ SATA and eSATA Interface

Order Information

Part Number	Package	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
PVS0402T-SERIES	0402 ^T	Halogen free	Tape & Reel	10,000 PCS	UL 94V-0	7 inches
PVS0603T-SERIES	0603	Halogen free	Tape & Reel	5,000 PCS	UL 94V-0	7 inches

Pin Configuration and Functions

Pin	Name	Description	Circuit Diagram
1	IO1	Connect to IO	
2	IO2	Connect to IO	

Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

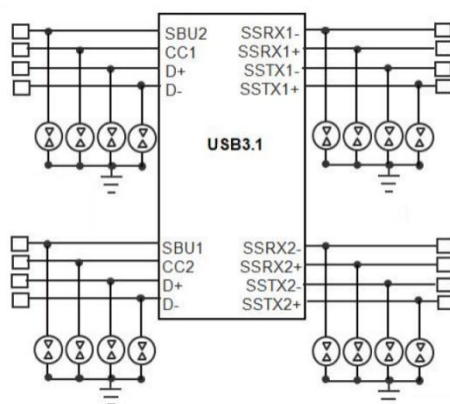
Parameters	Symbol	Value	Unit
Response time	T_{rise}	<0.5	ns
Operating temperature	T_{OP}	-50~85	°C
Storage temperature	T_{STG}	-50~125	°C
Lead temperature	T_L	260	°C

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Part Number	V_{DC} (max.)	$V_{trigger}$ (typ.)	$V_{CL@}$ 30ns (typ.)	$I_R@$ Initia State (max.)	$I_R@$ after ESD Test (max.)	C_J (typ.)
	(V)	(V)	(V)	(μA)	(μA)	(pF)
PVS0402T060P0R05	6	300	30	<0.05	<10	0.05
PVS0402T120P0R05	12	300	30	<0.05	<10	0.05
PVS0402T240P0R05	24	300	30	<0.05	<10	0.05
PVS0603T060P0R05	6	400	30	<0.05	<10	0.05
PVS0603T120P0R05	12	400	30	<0.05	<10	0.05
PVS0603T240P0R05	24	400	30	<0.05	<10	0.05

Typical Application

Typical Interface Application



Ratings and Characteristic Curves (TA=25°C unless otherwise Specified)

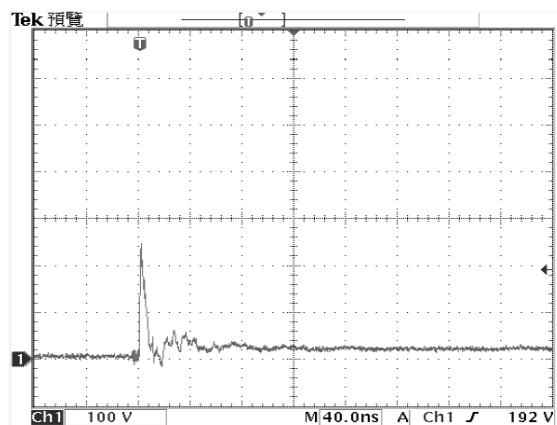


Fig.1 Typical ESD Response
(IEC 61000-4-2, 8kV contact discharge)

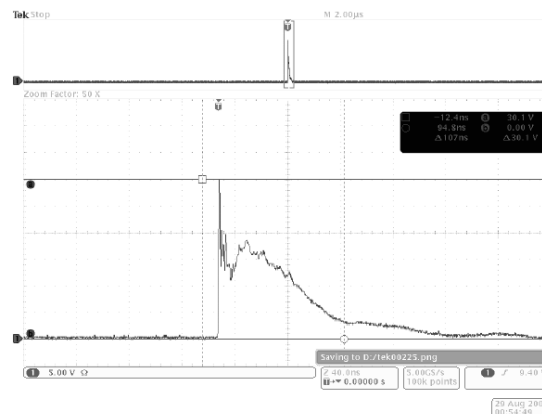


Fig.2 Typical ESD Clamping Voltage at 30ns

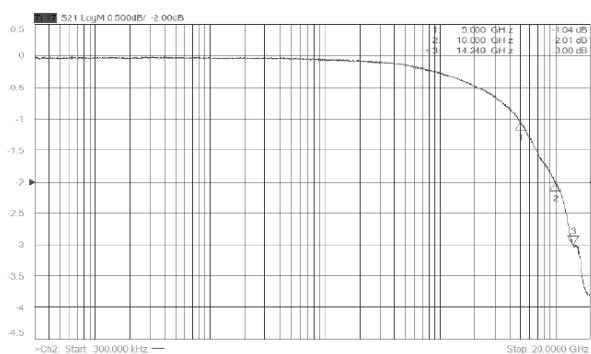


Fig.3 Insertion loss

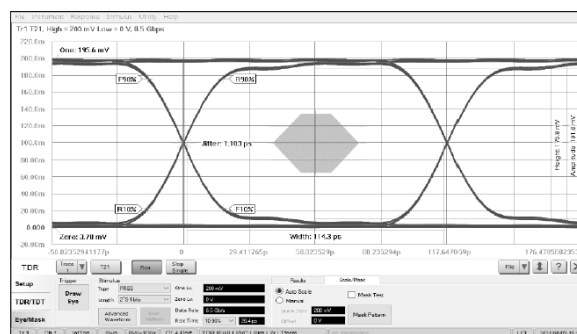
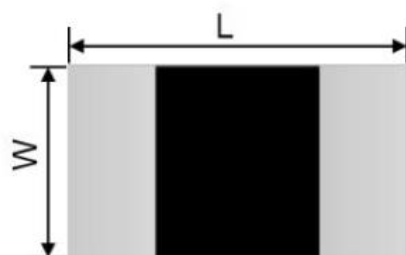
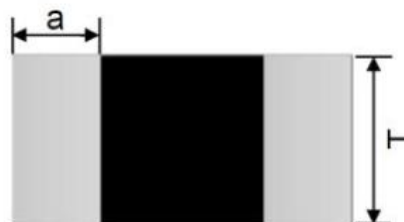


Fig.4 Eye pattern

Dimension



Top View (Bottom View)

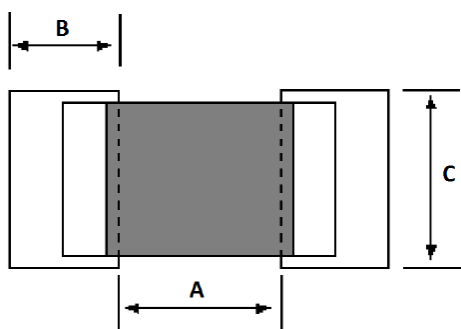


Side View

Units in millimeters

Symbol	0402	0603
Length(L)	1.00 ± 0.10	1.60 ± 0.10
Width(W)	0.60 ± 0.10	0.80 ± 0.10
Thickness(T)	0.60 max.	0.90 max.
Termination(a)	0.25 ± 0.10	0.30 ± 0.10

Recommended Land Pattern



Symbol	A	B	C
0402	0.4~0.6	0.6~0.9	0.6~0.7
0603	0.9~1.2	0.9~1.2	0.8~1.0

Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference only

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release(R&D)	14-December -2022

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