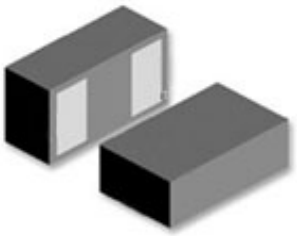
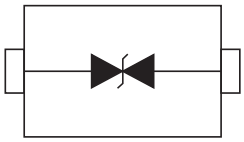
ESDPSA0402V14

Description

■ This device is an ultra low capacitance ESD product designed to protect very high speed data interfaces. ESDPSA0402V14 has a typical capacitance of only 0.05pf (I/O to GND), and it can be used to meet the ESD immunity requirements of IEC61000-4-2 (15KV air, 8KV contact discharge).





Schematic Diagram

Feature

■ ESD protection for high speed data lines to IEC61000-4-2
■ ESD contact discharge typical 8KV, max 15KV
■ ESD air discharge typical 15KV, max 25KV
■ Surface mount
■ Extremely low capacitance
■ Very low leakage current
■ Fast response time
■ Bi-directional ESD protection
■ Lead free solder termination
■ The best ESD protection for high frequency, low voltage applications
■ RoHS compliant & Halogen free

Application

■ High Definition Multi-Media Interface (HDMI)
■ Digital Visual Interface (DVI)
■ Display Port Interface (DP)
■ Unified Display Interface (UDI)
■ Mobile Display Digital Interface (MDDI)
■ Gigabit Ethernet
■ USB2.0 and USB3.0
■ IEEE1394 interface

Caution:
This component is designed for signal line protection only,
Not intended to be used under bias, not for application with a power line.

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Maximum Contact discharge voltage Per IEC61000-4-2	---	15KV	V
Maximum Air discharge voltage Per IEC61000-4-2	---	25KV	V
Maximum Operating temperature	T_{OPER}	-55 to +125	℃
Maximum Storage temperature	T_{STG}	-55 to +125	℃
Maximum lead temperature for soldering during 10s	T_L	260	℃

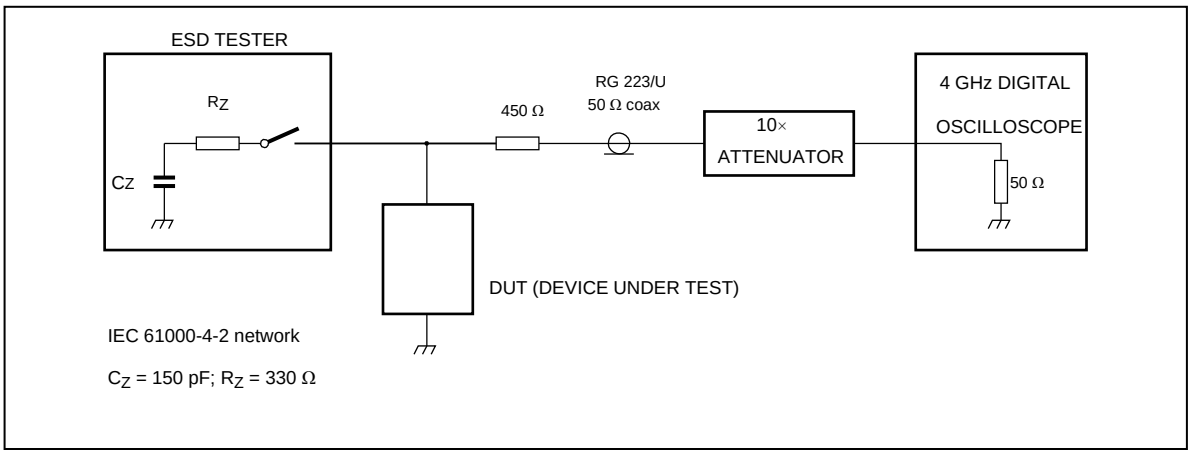
Electrical Characteristics(T_A=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Rated Voltage	V_R	---	---	---	14	V
Trigger voltage	V_T	IEC61000-4-2 8KV contact discharge	---	300	---	V
Clamping voltage	V_C	IEC61000-4-2 8KV contact discharge	---	35	---	V
Leakage current	I_L	DC 14V shall be applied on component	---	0.01	0.10	uA
Capacitance	C_P	V_R = 0V, f = 1MHz	---	0.05		pF

Note: 1 Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.

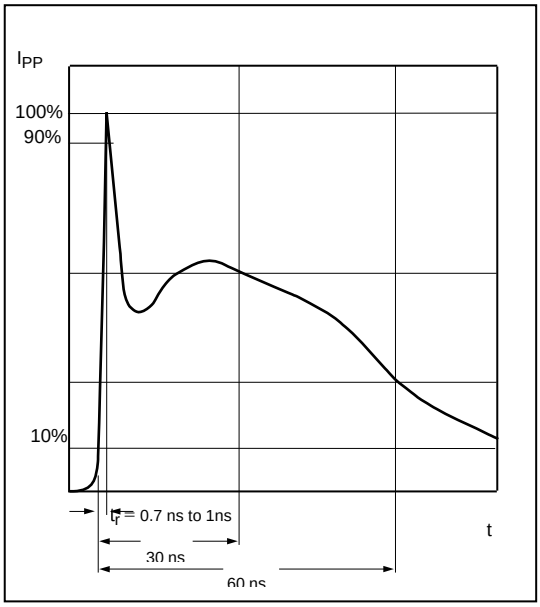
2 After reliability tests such as high temp storage, temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.

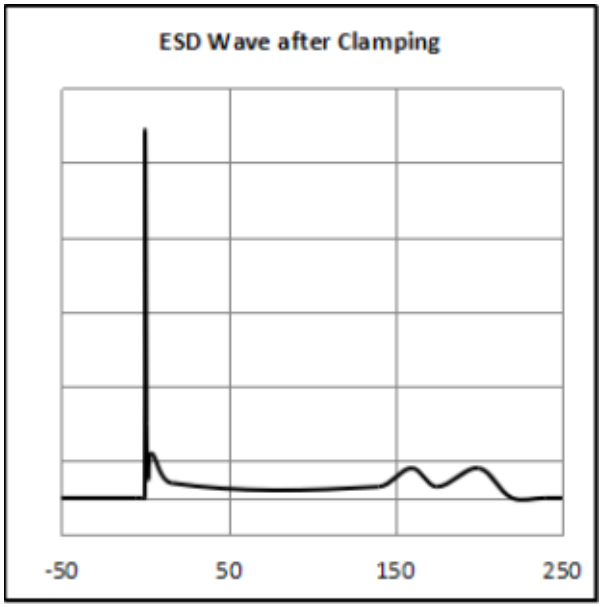
ESD Clamping Test



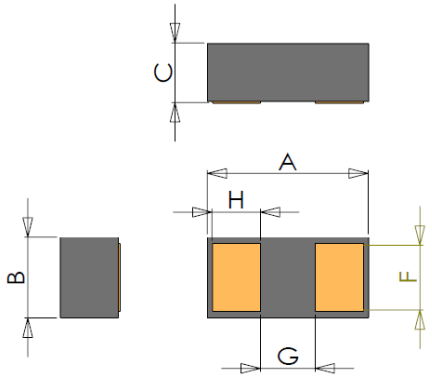
ESD Protection Devices

ESD Clamping Test Waveforms



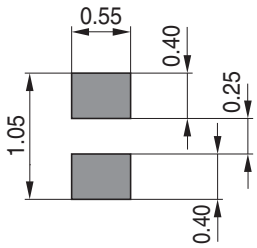


Product Dimension



Symbol	Dimension			Unit
	Min	Typ	Max	
A	0.95	1.0	1.05	mm
B	0.45	0.50	0.55	
C	0.32	0.36	0.40	
H	0.28	0.30	0.32	
F	0.41	0.43	0.45	
G	0.32	0.34	0.36	

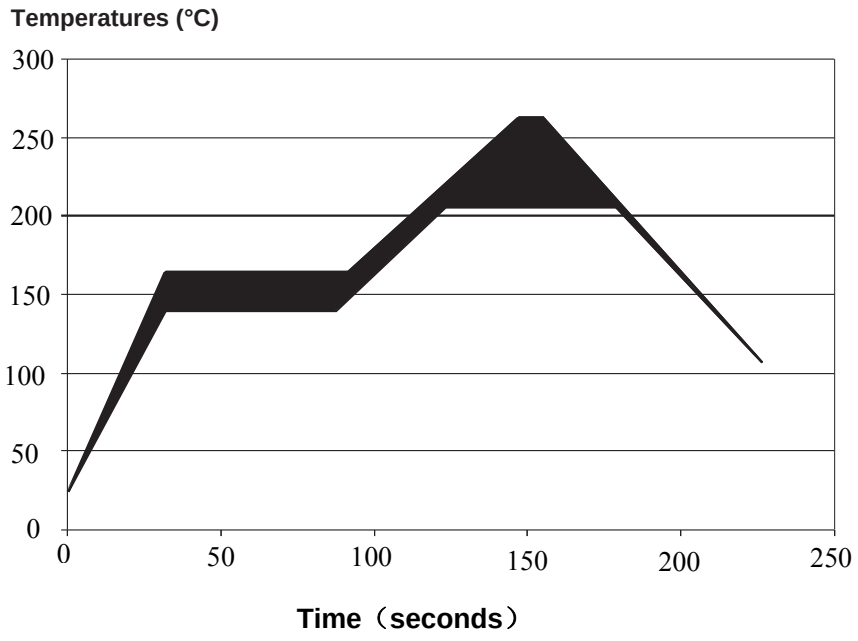
PAD Dimension



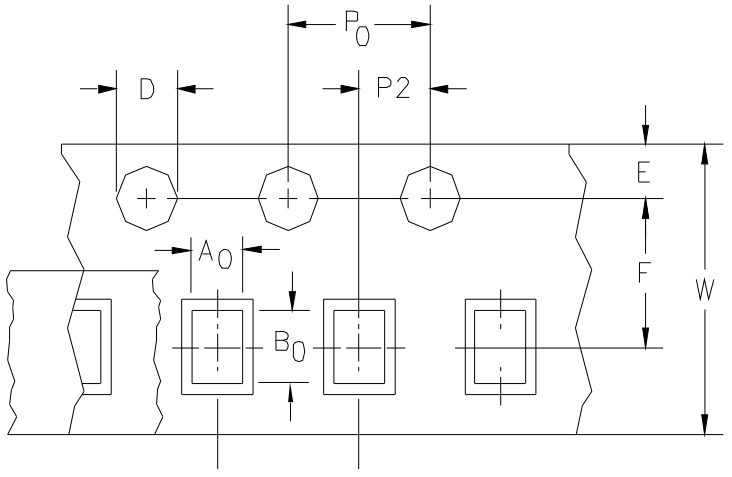
Dimensions in mm

Solder thickness 0.08 to 0.12mm recommended

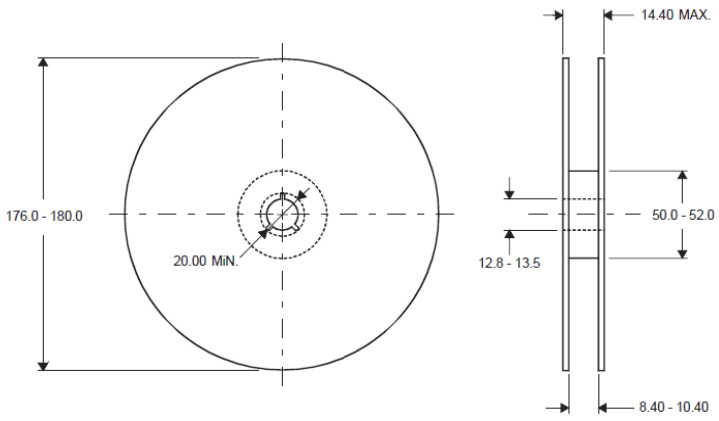
Solder Reflow Recommendations



Package Information

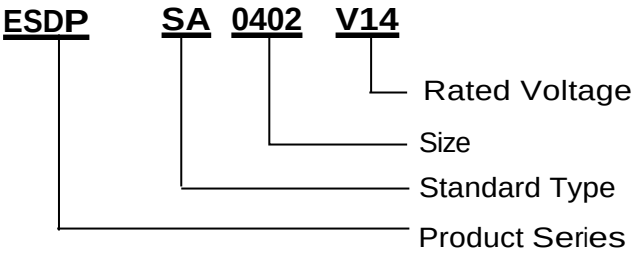


Dimension	Typical	Unit
A0	0.68	mm
B0	1.17	
D	1.55	
P0	4.00	
P1	2.00	
P2	2.00	
E	1.75	
F	3.50	
W	8.00	



DIMENSIONS ARE: MILLIMETERS

Part Number System



Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
ESDPSA0402V14	0402	0.44 mg	Tape & Reel	10,000pcs/reel	RoHS compliant

Revision history

Date	Revision	Description of changes
Jan. 2021	6.0	Update

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