

MLSEP05A-0402 Multilayer Polymer ESD Suppressor

Description

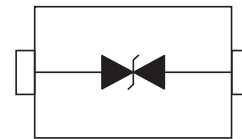
This device is an ultra low capacitance PESD product designed to protect very high speed data interfaces. MLSEP05A-0402 has a typical capacitance of only 0.05pf (I/O to GND), and it can be used to meet the ESD immunity requirements of IEC 61000-4-2 (15KV air, 8KV contact discharge).



Case: 0402

Features

- 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
- Multilayer structure
- 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



Schematic Diagram

Applications

- 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.

Multilayer Polymer ESD Suppressor

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}	-40 to +90	°C
Maximum Storage Temperature	T _{STG}	-55 to +125	°C
Maximum Lead Temperature for Soldering During 10s	T _L	260	°C

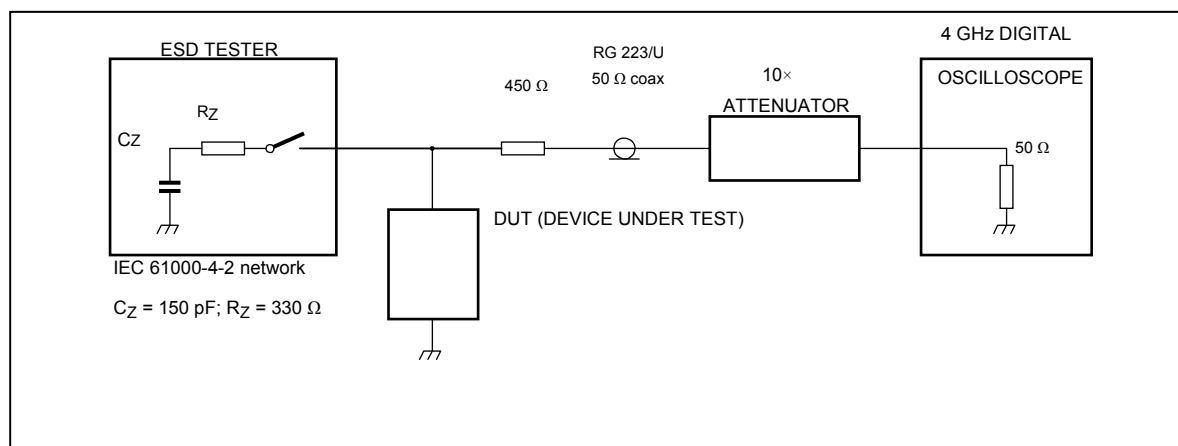
Electrical Characteristics (T_A=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Rated Voltage	V _R	---	---	---	5	V
Trigger Voltage	V _T	IEC61000-4-2 8KV contact discharge	---	300	---	V
Clamping Voltage	V _C	IEC61000-4-2 8KV contact discharge	---	20	---	V
Leakage Current	I _L	DC 5V shall be applied on component	---	0.10	100	nA
Capacitance	C _P	V _R = 0V, f = 1MHz	---	0.05	0.15	pF
ESD Pulse Withstand	Pulses	IEC61000-4-2 8KV contact discharge	100	---	---	---

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

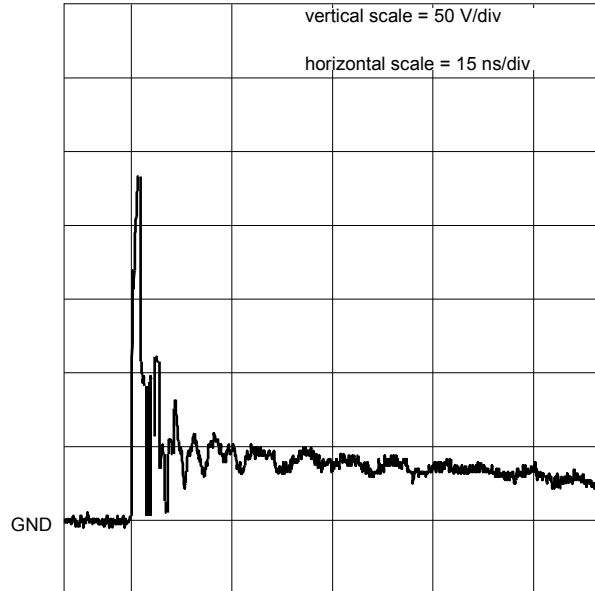
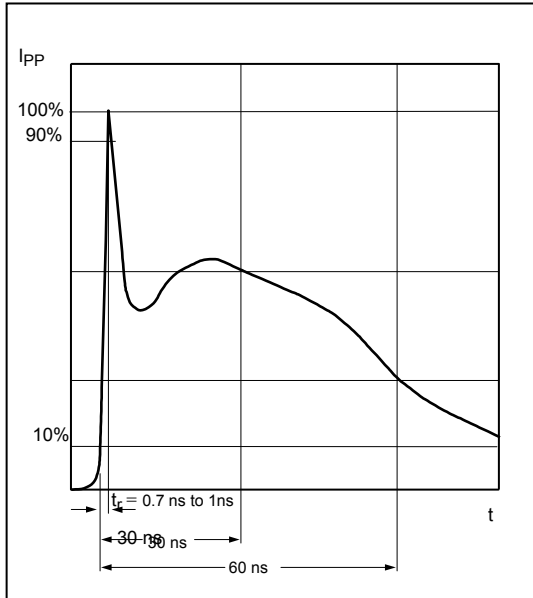
2 After reliability tests such as high temp storage, temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.

ESD Clamping Test



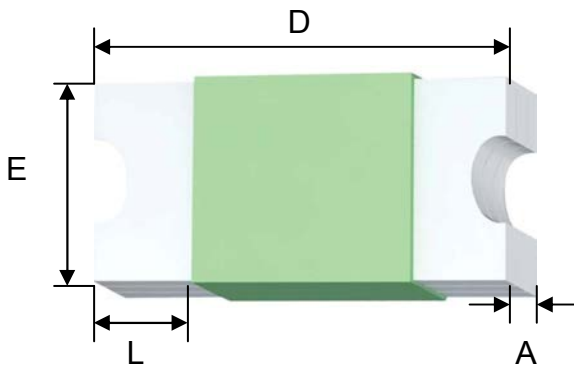
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ESD Clamping Test Waveforms



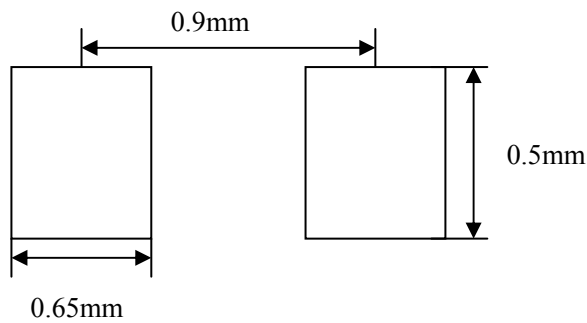
Product Dimensions

Case: 0402



Dimension	Unit: Millimeters		
	Min	Typ	Max
D	0.90	1.05	1.20
E	0.45	0.55	0.65
L	0.15	0.25	0.35
A	0.25	0.36	0.45

PAD Dimensions

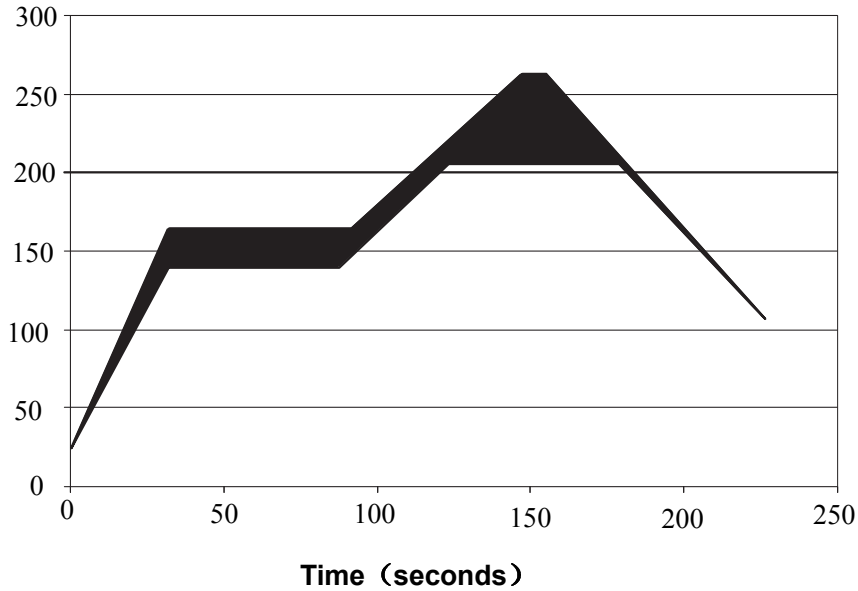


Solder thickness 0.15 to 0.2mm

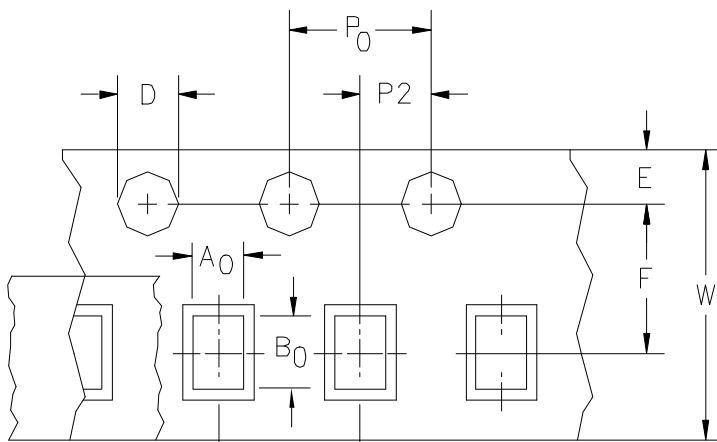
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Solder Reflow Recommendations

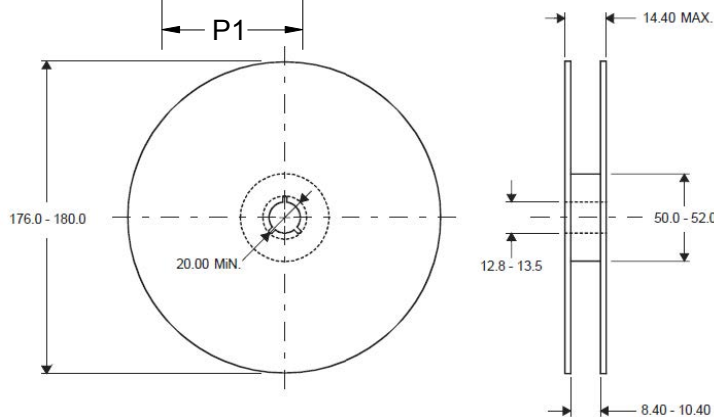
Ttemperatures (°C)



Package Information



Dimension	Typical	Unit
A0	0.75	mm
B0	1.22	
D	1.55	
P0	4.00	
P1	2.00	
P2	2.00	
E	1.75	
F	3.50	
W	8.00	



DIMENSIONS ARE: MILLIMETERS