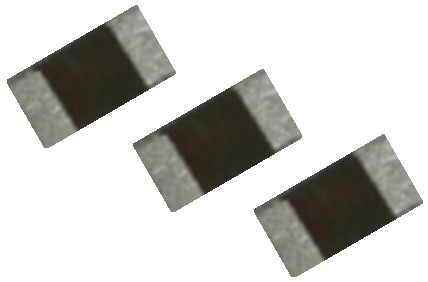
Surface Mount ESD Suppressors

PeDiode® ESD Suppressors, PS0402V014AT



Features:

- Excellent protection against ESD damage
- Ultra low capacitance for high speed data lines (<0.1 pF)
- Low typical leakage current (<10 nA)
- Fast response time (<1 ns)
- Excellent 4KV trigger capability (100%)
- Bi-directional design
- Lead free and halogen free polymer composite materials
- RoHS compliant
- Operating temperature –55°C ~ +90°C

Applications:

- Antennas
- USB2.0/3.0
- HDMI1.3/1.4
- Computer Peripherals
- Display Port
- Smart Mobile Phone
- Set Top Box
- Notebook

Features:

PS 0402 V014 A T
(1) (2) (3) (4) (5)

(1) Category code
(2) Dimension code: L x W (inch)
The first two digits - L (length)
The last two digits - W (width)
(3) Rated voltage code: V014 - 14 V_{DC}
(4) Series code
(5) Package code: T - Tape & Reel

Electrical Characteristics (@ 25˚C):

Characteristic	Value
IEC61000-4-2 Direct Discharge **IEC61000-4-2 Air Discharge**	Level 4 —8 kV Level 4 —15 kV
Trigger Voltage	300 V typical
Clamping Voltage	25 V typical
Response Time	Less than 1 ns
Capacitance @ f = 1GHz	0.05 pF typical
Leakage Current @ 14 V_{DC}	10 nA max
Rated Voltage	14 V_{DC} max
ESD Pulse Withstand	1000 Pulses typical

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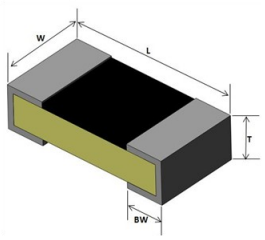
Shape and Dimensions:

Size Inch/(mm)	L	W	T	BW
0402 (1005)	0.039±0.004 (1.00 ± 0.10)	0.020±0.004 (0.50 ± 0.10)	0.014±0.004 (0.35 ± 0.10)	0.009±0.004 (0.23 ± 0.10)



Representative Test Waveform Per IEC61000-4-2 Level 4, 8kV Direct Discharge:

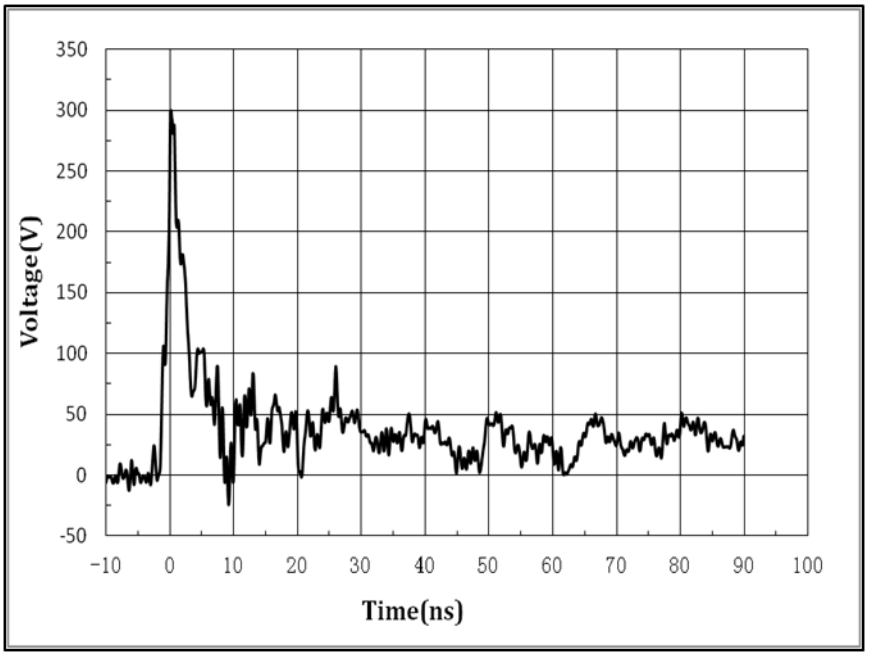
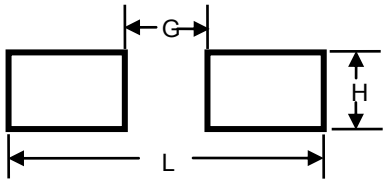


Fig.4 Clamped +8kV pulse waveform

Recommended Foot Print Dimensions:

Size Inch/(mm)	L	G	H
0402 (1005)	0.063 (1.60)	0.016 (0.40)	0.028 (0.70)



Packaging and Marking Information:

Package	Tape & Reel Quantity (piece)
0402 (1005)	15,000

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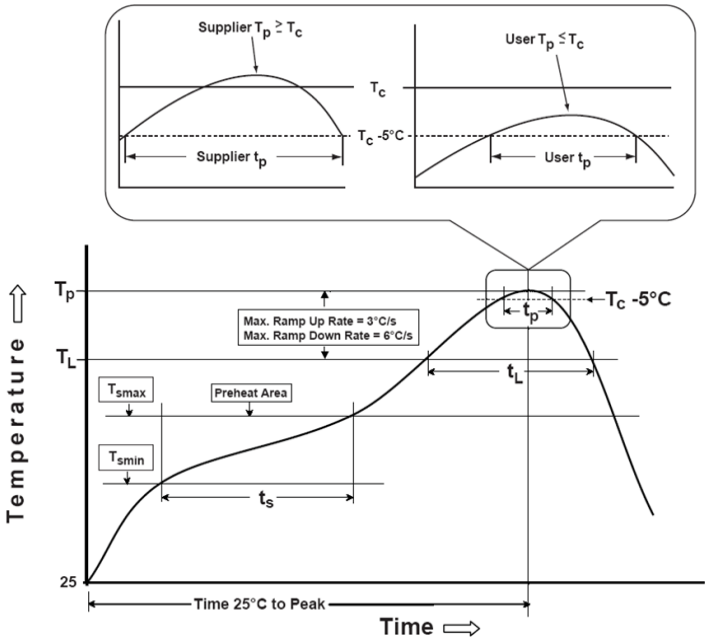
Recommended Reflow Soldering Profile:

Profile Feature	Pb-Free Assembly
Preheat/Soak Temperature Min (T_{smin}) Temperature Max(T_{smax}) Time(t_s) from (T_{smin} to T_{smax})	 150°C 200°C 60~120 seconds
Ramp-uprate (T_L to T_p)	3°C/second max.
Liquidous temperature(T_L) Time(t_L) maintained above T_L	217°C 60~150 seconds
Peak package body temperature (T_p)	260°C
Time (t_p)*within 5°C of the specified classification temperature (T_c)	30 seconds *
Ramp-down rate (T_p to T_L)	6°C/second max.
Time 25°C to peak temperature	8 minutes max.
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum	



Recommended conditions for hand soldering:

1. Appropriate temperature (max.) of soldering iron tip/soldering time (max.): 280°C/10s or 350°C/ 3s. Using hot air rework station with tip that can melt the solder on both terminations at the same time is strongly recommended. Do not directly contact the chip termination with the tip of soldering iron.

Storage Condition With Package:

- The maximum ambient temperature shall not exceed 35°C. Storage temperature higher than 35°C could result in the deformation of packaging materials.
- The maximum relative humidity recommended for storage is 75%.High humidity with high temperature could accelerate the oxidation of the solder plating on the termination and reduce the solderability of the components.
- Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use.
- The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present.