

## INTRODUCTION

The HV MLV Series is a surface mount, multilayer varistor (MLV) design for line voltage applications. While typical MLV's are designed for low voltage applications, these MLV's are available with maximum continuous operating voltages (MCOV) ranging from 150VAC to 300VAC. Available in EIA chip sizes of 0806 and 1206.

## STYLE DESIGNATION

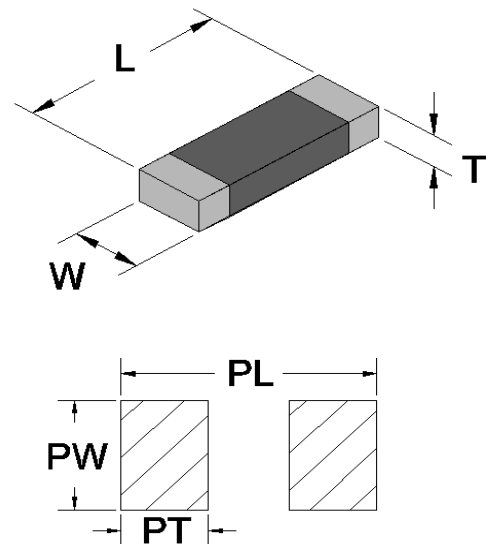
The Maida Style Number is the typical means to identify our components when ordered. The style number identifies several parameters that are important for the characteristics of the device. An alternative ordering method, if known, is by our Item Number.

The following example is the standard part numbering system when ordering our SMD Series components by the Maida Style Number:

- HV 151 N 0806 101
1. **Package Description** — HV – HV Series MLV
  2. **AC Voltage Rating** — Two significant figures plus number of zeroes that follow, i.e. 151 is 150 VAC
  3. **End Termination Type** — N – Tin (Sn) plated Nickel (Ni)
  4. **Chip Size** — As defined by EIA standards
  5. **Special Instructions**, 101 is standard

## STANDARD MARKING

The HV MLV Series do not have individual markings on the components due to the chip sizes. The HV MLV Series components are supplied Tape & Reel. Each reel is marked with all required information and may include special annotation as required by our customers.



## INTRODUCTION

The MLV Series, designed for surface mount applications, are small multilayer varistors. They are available in standard EIA sizes of 0402, 0603, 0805, 1206, 1210, 1812 and 2220 packages.

**SV Series** – This is our standard MLV series. They provide good high current pulse protection with moderate capacitance.

The MLV Series of varistors are designed to provide transient, surge, and ESD (Electrostatic Discharge) protection for a wide variety of applications.

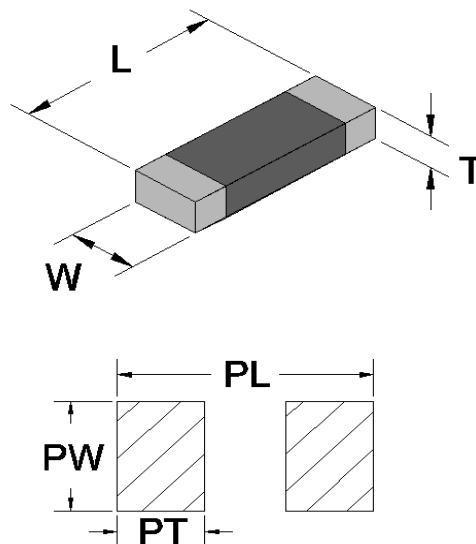
### STYLE DESIGNATION

The Maida Style Number is the typical means to identify our components when ordered. The style number identifies several parameters that are important for the characteristics of the device. An alternative ordering method, if known, is by our Item Number.

The following example is the standard part numbering system when ordering our MLV Series components by the Maida Style Number:

### STANDARD MARKING

The MLV Series do not have markings.



- SV 18 N 0603 120 R**
1. **Series Designation** ———— SV
  2. **DC Voltage Rating (VDC)** ———— 18
  3. **End Termination Type** ———— N  
N – Tin (Sn) plated Nickel (Ni)
  4. **Chip size** ———— 0603  
As defined by EIA standards
  5. **Nominal Capacitance (pF)** ———— 120  
Two significant figures plus number of zeroes that follow, i.e. 120 is 12 pF
  8. **Packaging Code** ———— R  
B – Bulk  
R – Tape & Reel



**HV SERIES (For line voltage and higher)**

Maida Style Number	Recognitions To Safety Agency Standards A B C D E F						Nominal Size (EIA)	Minimum Marking	Maximum Ratings					Electrical Characteristics					
									Continuous		Transient			Varistor Voltage @ 1 mA DC		Max Clamping Voltage (@ Test Current)		Typical Cap. 1 V rms @ 1kHz	
									Applied Voltage		Energy 8 x 20 μsec	Nominal Discharge I <sub>NOM</sub> 8x20μs (15)	Peak Current 8 x 20 μsec # Pulses						
													(AC)	(DC)	(J)	(A)	(A)		(V)
HV151N0806101	X	X					0806	N/A	150	200	0.7	10.0	40	25	216	264	340	1	60
HV181N0806101	X	X					0806	N/A	180	230	0.8	10.0	40	25	243	297	400	1	40
HV251N0806101	X	X					0806	N/A	250	330	1.0	10.0	40	25	354	432	500	1	25
HV271N0806101	X	X					0806	N/A	270	360	1.2	10.0	40	25	387	473	560	1	15
HV151N1206101	X	X					1206	N/A	150	200	1.5	10.0	80	50	216	264	350	1	35
HV181N1206101	X	X					1206	N/A	180	230	1.6	10.0	80	50	243	297	380	1	30
HV251N1206101	X	X					1206	N/A	250	330	2.0	10.0	80	50	354	432	560	1	20
HV271N1206101	X	X					1206	N/A	270	360	2.5	10.0	80	50	387	473	600	1	20
HV301N1206101	X	X					1206	N/A	300	390	3.0	10.0	80	50	425	518	650	1	15

**SV SERIES**

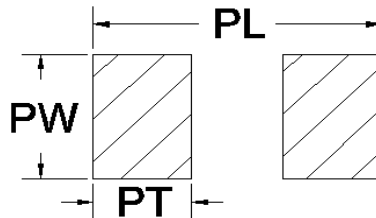
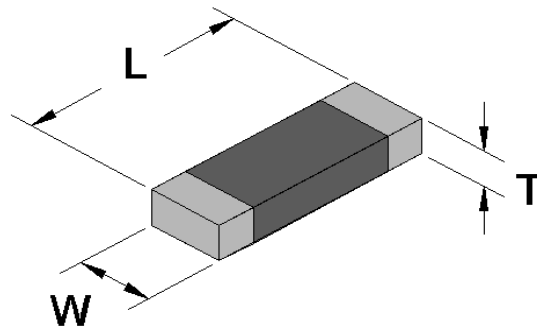
Maida Style Number	Recognitions To Safety Agency Standards A B C D E F						Nominal Size (EIA)	Minimum Marking	Maximum Ratings					Electrical Characteristics					
									Continuous		Transient			Varistor Voltage @ 1 mA DC		Max Clamping Voltage (@ Test Current)		Typical Cap. 1 V rms @ 1kHz	
									Applied Voltage		Energy		Peak Current 8 x 20 μsec # Pulses						
											(AC)	(DC)	10 x 1000 μsec (J)	8 x 20 μsec (J)	1	2	(V)		(V)
SV5R5N0402271							0402	N/A	4	5.5	0.1	0.1	20	20	6.9	9.3	19	1	270
SV9N0402131							0402	N/A	6.5	9	0.1	0.1	20	20	11.3	15.2	32	1	130
SV11N0402121							0402	N/A	8	11	0.1	0.1	20	20	12.7	17.3	33	1	120
SV11N0402400							0402	N/A	8	11	0.1	0.1	10	10	12.7	17.3	33	1	40
SV14N0603900							0402	N/A	11	14	0.1	0.1	20	20	16.2	19.8	38	1	90
SV14N0603330							0402	N/A	11	14	0.1	0.1	10	10	16.2	19.8	42	1	33
SV18N0603850							0402	N/A	14	18	0.1	0.1	20	20	19.8	24.2	45	1	85
SV3R5N0603181							0603	N/A	2.5	3.3	0.1	0.1	20	20	4.4	6.6	13	1	180
SV5R5N0603271							0603	N/A	4	5.5	0.1	0.1	30	30	6.9	9.3	16	1	270
SV8N0603141							0603	N/A	6	8	0.1	0.1	30	30	8.8	13.2	29	1	140
SV9N0603211							0603	N/A	7	9	0.1	0.1	30	30	10	15	27	1	210
SV11N0603201							0603	N/A	8	11	0.1	0.1	30	30	13	18	27	1	200
SV14N0603101							0603	N/A	11	14	0.1	0.1	30	30	16.2	19.8	35	1	100
SV14N0603151							0603	N/A	11	14	0.1	0.1	30	30	16.2	19.8	35	1	150
SV18N0603131							0603	N/A	14	18	0.1	0.1	30	30	19.8	24.2	40	1	130
SV26N0603101							0603	N/A	20	26	0.1	0.1	30	30	27.9	34.1	58	1	100
SV30N0603040							0603	N/A	25	30	0.1	0.1	30	30	38	46	65	1	40
SV39N0603030							0603	N/A	30	39	0.1	0.1	30	30	42	52	80	1	30
SV5R5N0805102							0805	N/A	4	5.5	0.3	0.3	120	120	6.9	9.3	15	2	1000
SV9N0805641							0805	N/A	6.5	9	0.3	0.3	120	120	11.3	15.2	24	2	640
SV11N0805581							0805	N/A	8	11	0.3	0.3	120	120	13	18	27	2	580
SV14N0805501							0805	N/A	10	14	0.3	0.3	120	120	17.5	23.7	30	2	500
SV18N0805401							0805	N/A	14	18	0.3	0.3	120	120	23	30	40	2	400
SV22N0805361							0805	N/A	17	22	0.3	0.3	120	120	28	34	50	2	360
SV26N0805281							0805	N/A	20	26	0.3	0.3	120	120	33	40	58	2	280
SV30N0805201							0805	N/A	25	30	0.3	0.3	120	120	38	46	65	2	200
SV39N0805151							0805	N/A	30	39	0.3	0.3	120	120	42	52	80	2	150
SV5R5N1206312							1206	N/A	4	5.5	0.4	0.4	100	100	7.5	10.5	20	10	3100
SV9N1206222							1206	N/A	6.5	9	0.4	0.4	150	150	11.3	15.2	25	10	2200
SV14N1206172							1206	N/A	10	14	0.4	0.4	150	150	17.5	23.7	30	10	1700
SV18N1206102							1206	N/A	14	18	0.4	0.4	150	150	23	30	40	10	1000
SV26N1206941							1206	N/A	20	26	0.4	0.4	150	150	33	40	58	10	940
SV30N1206891							1206	N/A	25	30	0.4	0.4	150	150	38	46	66	10	890
SV42N1206641							1206	N/A	30	42	0.4	0.4	150	150	46	60	180	10	640
SV48N1206601							1206	N/A	40	48	0.4	0.4	150	150	55	66	100	10	600
SV56N1206181							1206	N/A	40	56	0.4	0.4	150	150	63	77	120	10	180
SV18N1210172							1210	N/A	14	18	0.9	0.9	220	220	23	30	40	10	1700
SV26N1210122							1210	N/A	20	26	0.9	0.9	220	220	33	40	58	10	1200
SV30N1210901							1210	N/A	25	30	0.9	0.9	220	220	38	46	66	10	900
SV38N1210781							1210	N/A	30	38	0.9	0.9	250	250	42.3	51.7	77	10	780
SV48N1210451							1210	N/A	40	48	0.9	0.9	250	250	55	66	100	10	450
SV60N1210601							1210	N/A	50	60	0.9	0.9	250	250	69	83	120	10	600

A = UL1449      D = VDE  
 B = cUL        E = DEMKO  
 C = CSA        F =

# MLV SERIES

## MECHANICAL SPECIFICATIONS

Size	Length (L)	Width (W)	MAX. Height (H)	Recommended Land Pad Length (PL)	Recommended Land Pad Width (PW)	Recommended Land Pad Thickness (PT)	End Termination Material
HV - 0806	0.086"±0.008"	0.067"±0.008"	0.079"	0.138"	0.079"	0.047"	Ag/Ni/Sn
HV - 1206	0.126"±0.012"	0.067"±0.008"	0.079"	0.159"	0.079"	0.047"	Ag/Ni/Sn
0402	0.039"±0.004"	0.020"±0.002"	0.020"	0.067"	0.024"	0.022"	Ag/Ni/Sn
0603	0.063"±0.006"	0.032"±0.006"	0.035"	0.100"	0.042"	0.037"	Ag/Ni/Sn
0805	0.079"±0.008"	0.049"±0.008"	0.035"	0.137"	0.061"	0.039"	Ag/Ni/Sn
1206	0.126"±0.012"	0.063"±0.012"	0.067"	0.159"	0.079"	0.047"	Ag/Ni/Sn
1210	0.126"±0.012"	0.098"±0.012"	0.071"	0.159"	0.114"	0.047"	Ag/Ni/Sn



### Recommended Reflow Profile

