WORLD PRODUCTS, LLC
ELECTRONIC COMPONENT SOLUTIONS

1970 - 2010

CELEBRATING 40 YEARS IN BUSINESS

MULTILAYER VARISTORS

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RoHS Compliant

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Standard Series

Features

1. SMD Type Chip Varistor provides high reliability for surface mount application.
2. Wide operating voltage range.
3. High transient current capability.
4. Good solderability. (Ni, Sn plating)
5. Nickel Barrier.

Applications

1. Transient Voltage Protection for IC and Transistor.
2. ESD and I/O Protection.
3. Telecommunication Transient Protection.
4. EFT / Burst Protection.

Ordering Information

WPMLVN	0402	-	050	A	-	T
(1)	(2)		(3)	(4)		(5)

(1) Series
WPMLVN: Normal Capacitance series IEC-61000-4-5, Surge (8/20μs,10/1000μs) protection. Low voltage: 5.5V~56V

(2) Dimensions in Inches
0402 (= 1005mm)
0603 (= 1608mm)
0805 (= 2012mm)
1206 (= 3216mm)

(3) Maximum continuous working voltage

Code	Working Voltage	Code	Working Voltage
050	5.5	260	26
080	8	300	30
110	11	330	33
140	14	420	42
180	18	560	56

(4) Surge Energy: Measured in Joules

Code	A	B	C	D	E	F	G	H	I	J	K	L	M
Surge Energy	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.2	0.3	0.4

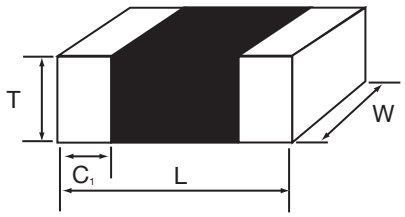
(5) Packaging
B: Bulk Package
T: Tape & Reel (Ø 178mm [7 inch])
L: Tape & Reel (Ø 254mm [10 inch])

Standard Series (continued)

Shape & Dimensions

unit : mm [inches]

Size	L	W	T (max.)	C
0402	1.0±0.05 [.039±.002]	0.5±0.05 [.020±.002]	0.55 [.022]	0.20±0.10 [.008±.004]
0603	1.6±0.15 [.063±.006]	0.8±0.15 [.031±.006]	0.95 [.037]	0.30±0.20 [.012±.008]
0805	2.0±0.2 [.079±.008]	1.25±0.2 [.049±.008]	1.2 [.047]	0.50±0.30 [.020±.012]
1206	3.2±0.2 [.126±.008]	1.6±0.2 [.063±.008]	1.4 [.055]	0.50±0.30 [.020±.012]



0402 Series Specifications

Part Number	Maximum Ratings				Electrical Characteristics			
	Working Voltage		Rated Single Pulse Transient		Varistor Voltage @ 1mA DC		Maximum Clamping Voltage	Typical Capacitance
	AC RMS	DC	Energy 10/1000µs	Peak 8/20µs	Min.	Max.	8/20µs	@1MHz
	Volts	Volts	Joules	Amps	Volts	Volts	Volts	pF
	V_{WAC}	V_{WDC}*	W_S	I_S	V_V		V_C**	C
WPMLVN0402-050E☐	4.0	5.5	0.05	20	7.1	13.5	30	360
WPMLVN0402-080E☐	5.7	8.0	0.05	20	9.6	12.5	24	280
WPMLVN0402-110E☐	7.8	11.0	0.05	20	12.7	15.5	27	200
WPMLVN0402-140E☐	10.0	14.0	0.05	20	15.9	20.3	30	120
WPMLVN0402-180E☐	12.7	18.0	0.05	20	21.5	28.0	40	90

0603 Series Specifications

Part Number	Maximum Ratings				Electrical Characteristics			
	Working Voltage		Rated Single Pulse Transient		Varistor Voltage @ 1mA DC		Maximum Clamping Voltage	Typical Capacitance
	AC RMS	DC	Energy 10/1000µs	Peak 8/20µs	Min.	Max.	8/20µs	@1MHz
	Volts	Volts	Joules	Amps	Volts	Volts	Volts	pF
	V_{WAC}	V_{WDC}*	W_S	I_S	V_V		V_C**	C
WPMLVN0603-050J☐	4.0	5.5	0.1	30	7.1	13.5	30	670
WPMLVN0603-080J☐	5.7	8.0	0.1	30	9.6	12.5	24	470
WPMLVN0603-110J☐	7.8	11.0	0.1	30	12.7	15.5	27	400
WPMLVN0603-140J☐	10.0	14.0	0.1	30	15.9	20.3	30	360
WPMLVN0603-180J☐	12.7	18.0	0.1	30	21.5	28.0	40	300

*V_{WDC}: Leakage Current at 25°C is under 50µA at V_{WDC}

**V_C: Maximum Peak voltage at a specied pulse current and waveform

Energy Rating	Pulse & waveform
0.05 Joules	1A 8/20µs
0.10 Joules	2A 8/20µs
0.20-0.30 Joules	5A 8/20µs

Note: Parts with other electrical characteristics available upon request.

0805 Series Specifications

Part Number	Maximum Ratings				Electrical Characteristics			
	Working Voltage		Rated Single Pulse Transient		Varistor Voltage @ 1mA DC		Maximum Clamping Voltage	Typical Capacitance
	AC RMS	DC	Energy 10/1000µs	Peak 8/20µs	Min.	Max.	8/20µs	@1MHz
	Volts	Volts	Joules	Amps	Volts	Volts	Volts	pF
	V_{WAC}	V_{WDC}*	W_S	I_S	V_V		V_C**	C
WPMLVN0805-050L☐	4.0	5.5	0.3	120	7.1	13.5	30	3000
WPMLVN0805-080L☐	5.7	8.0	0.3	120	9.6	12.5	24	1900
WPMLVN0805-110L☐	7.8	11.0	0.3	120	12.7	15.5	27	1600
WPMLVN0805-140L☐	10.0	14.0	0.3	100	15.9	20.3	30	1500
WPMLVN0805-180L☐	12.7	18.0	0.3	100	21.5	28.0	40	1200
WPMLVN0805-260L☐	18.4	26.0	0.3	100	29.0	38.5	58	750
WPMLVN0805-050J☐	4.0	5.5	0.1	40	7.1	13.5	30	1600
WPMLVN0805-080J☐	5.7	8.0	0.1	40	9.6	12.5	24	900
WPMLVN0805-110J☐	7.8	11.0	0.1	40	12.7	15.5	27	760
WPMLVN0805-140J☐	10.0	14.0	0.1	40	15.9	20.3	30	700
WPMLVN0805-180J☐	12.7	18.0	0.1	30	21.5	28.0	40	570
WPMLVN0805-260J☐	18.4	26.0	0.1	30	29.0	38.5	58	430

1206 Series Specifications

Part Number	Maximum Ratings				Electrical Characteristics			
	Working Voltage		Rated Single Pulse Transient		Varistor Voltage @ 1mA DC		Maximum Clamping Voltage	Typical Capacitance
	AC RMS	DC	Energy 10/1000µs	Peak 8/20µs	Min.	Max.	8/20µs	@1MHz
	Volts	Volts	Joules	Amps	Volts	Volts	Volts	pF
	V_{WAC}	V_{WDC}*	W_S	I_S	V_V		V_C**	C
WPMLVN1206-050M☐	4.0	5.5	0.4	150	7.1	13.5	30	5800
WPMLVN1206-080M☐	5.7	8.0	0.4	150	9.6	12.5	24	4500
WPMLVN1206-110M☐	7.8	11.0	0.4	150	12.7	15.5	27	3800
WPMLVN1206-140M☐	10.0	14.0	0.4	150	15.9	20.3	30	3400
WPMLVN1206-180M☐	12.7	18.0	0.4	150	21.5	28.0	40	2600
WPMLVN1206-260M☐	18.4	26.0	0.4	120	29.0	38.5	58	1900
WPMLVN1206-330M☐	23.3	33.0	0.4	120	38.0	47.0	72	1100
WPMLVN1206-420M☐	30.0	42.0	0.4	100	46.0	58.0	86	600
WPMLVN1206-560M☐	40.0	56.0	0.4	100	58.0	76.0	110	400
WPMLVN1206-050J☐	4.0	5.5	0.1	40	7.1	13.5	30	3300
WPMLVN1206-080J☐	5.7	8.0	0.1	40	9.6	12.5	24	2800
WPMLVN1206-110J☐	7.8	11.0	0.1	40	12.7	15.5	27	2400
WPMLVN1206-140J☐	10.0	14.0	0.1	40	15.9	20.3	30	2000
WPMLVN1206-180J☐	12.7	18.0	0.1	30	21.5	28.0	40	1800

*V_{WDC}: Leakage Current at 25°C is under 50µA at V_{WDC}

**V_C: Maximum Peak voltage at a specied pulse current and waveform

Energy Rating	Pulse & waveform
0.05 Joules	1A 8/20µs
0.10 Joules	2A 8/20µs
0.20-0.30 Joules	5A 8/20µs
0.40 Joules	10A 8/20µs

Note: Parts with other electrical characteristics available upon request.

0402 Series Specifications

Part Number	Maximum Ratings		Electrical Characteristics			
	Working Voltage		Varistor Voltage @ 1mA DC		Maximum Clamping Voltage	Typical Capacitance
	AC RMS	DC	Min.	Max.	8/20µs	@1MHz
	Volts	Volts	Volts	Volts	Volts	pF
	V_{WAC}	V_{WDC}(1)	V_V		V_C(2)	C
WPMLVL0402-050A100☐*	4.0	5.5	9.7	13.5	35	10
WPMLVL0402-050A400☐*	4.0	5.5	9.7	13.5	30	40
WPMLVL0402-050A101☐*	4.0	5.5	9.7	13.5	25	100
WPMLVL0402-050A201☐*	4.0	5.5	9.7	13.5	25	200 (typ)
WPMLVL0402-050E361☐*	4.0	5.5	9.7	13.5	30	360 (typ)
WPMLVL0402-080A100☐*	5.7	8.0	14.0	17.8	40	10
WPMLVL0402-080A400☐*	5.7	8.0	14.0	17.8	35	40
WPMLVL0402-080A101☐*	5.7	8.0	14.0	17.8	30	100
WPMLVL0402-140A100☐*	10.0	14.0	18.0	24.0	45	10
WPMLVL0402-140A400☐*	10.0	14.0	18.0	24.0	40	40
WPMLVL0402-180A050☐*	12.7	18.0	24.0	32.0	70	5
WPMLVL0402-180A100☐*	12.7	18.0	24.0	32.0	60	10
WPMLVL0402-180A400☐*	12.7	18.0	24.0	32.0	50	40
WPMLVL0402-180A900☐*	12.7	18.0	24.0	32.0	50	90 (typ)

0603 Series Specifications

Part Number	Maximum Ratings		Electrical Characteristics			
	Working Voltage		Varistor Voltage @ 1mA DC		Maximum Clamping Voltage	Typical Capacitance
	AC RMS	DC	Min.	Max.	8/20µs	@1MHz
	Volts	Volts	Volts	Volts	Volts	pF
	V_{WAC}	V_{WDC}(1)	V_V		V_C(2)	C
WPMLVL0603-050A100☐*	4.0	5.5	9.7	13.5	35	10
WPMLVL0603-050A400☐*	4.0	5.5	9.7	13.5	30	40
WPMLVL0603-050A101☐*	4.0	5.5	9.7	13.5	25	100
WPMLVL0603-050E251☐*	4.0	5.5	9.7	13.5	25	250 (typ)
WPMLVL0603-080A100☐*	5.7	8.0	14.0	17.8	40	10
WPMLVL0603-080A400☐*	5.7	8.0	14.0	17.8	35	40
WPMLVL0603-080A101☐*	5.7	8.0	14.0	17.8	30	100
WPMLVL0603-140A100☐*	10.0	14.0	18.0	24.0	45	10
WPMLVL0603-140A400☐*	10.0	14.0	18.0	24.0	40	40
WPMLVL0603-180A050☐*	12.7	18.0	24.0	32.0	70	5
WPMLVL0603-180A100☐*	12.7	18.0	24.0	32.0	60	10
WPMLVL0603-180A400☐*	12.7	18.0	24.0	32.0	50	40
WPMLVL0603-180E101☐**	12.7	18.0	24.0	32.0	45	100 (typ)

1.) V_{WDC}: Leakage Current at 25°C is under 20µA at V_{WDC}

2.) V_C: Maximum Peak voltage at a specied pulse current and waveform.
Pulse & Waveform
1A 8/20µs

Note: Parts with other electrical characteristics available upon request.