UN0805-XXXH Series

ROHS

MULTILAYER CHIP VARISTORS

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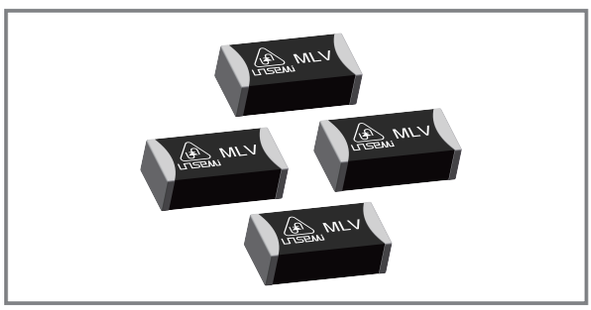
Features

- Varistor Voltage from 3.3V to 56V
- Fast response time
- Low leakage current
- High surge current ability
- Bidirectional clamping, high energy
- Wide Operating temperature range from -40℃-125℃
- Suitable for ESD protection



Notes@ (Electrical Characteristics)

- AC voltage at 50~60Hz
- Varistor voltage： Measured at 1mA DC
- Capacitance： Measured at f=1MHz, Vrms=0.5V
- Maximum clamping voltage ： Measured at 1A by 8/20μs Pulse
- Rated peak single pulse transient current ： Measured by 8/20μs Pulse

Mechanical Data

- Body ZnO
- End termination Ag/Ni/Sn
- Packaging Bulk/Tape
- Complies with Standard IEC61000-4-5

Part Numbering

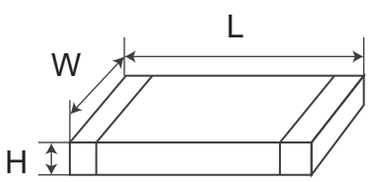
UN - 0805 - 270- H

(1) (2) (3) (4)

(1) Series Name
(2) 0805：Chip size –0805 (2.0 x 1.2 mm) size
(3) 270：Varistor voltage(Breakdown voltage) – 27Vdc
(4) High surge absorption series

Dimensions

Model	1005(0402)	1608(0603)	2012(0805)	3216(1206)	3225(1210)	4532(1812)	5750(2220)	8050(3220)
Length(L)	1.00±0.15	1.60±0.20	2.00±0.20	3.20±0.20	3.20±0.20	4.50±0.30	5.70±0.30	8.00±0.30
Width(W)	0.50±0.15	0.80±0.20	1.20±0.20	1.60±0.20	2.50±0.20	3.20±0.20	5.00±0.30	5.00±0.30
High(H)	0.70max	0.90max	1.30max	1.60max	2.50max	3.20max	4.50max	4.50max



Unit: mm

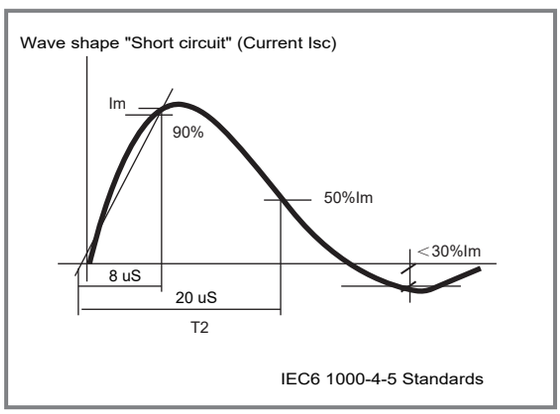
Electrical Characteristics @ 25℃ Unless Otherwise Specified)

Part Number	Working Voltage		Breakdown Voltage		Peak Current	Clamping Voltage		Typical capacitance value (pF)
	AC	DC	@ 1mA DC		8/20μS	8/20μS		
	V_{RMS}	V_{DC}	V_B		$I_{P(MAX)}$	V_C	A	
UN0805-3V3H	1.4	2	3.3	2.6-4.0	60	9.0	2	1200
UN0805-5V0H	2.4	3.3	5.0	4.0-6.0	80	12	2	900
UN0805-8V0H	4.0	5.6	8.0	7.0-9.9	60	18	2	1100
UN0805-120H	7.0	9.0	12	10-14	50	24	2	750
UN0805-180H	11	14	18	15.5-21	80	30	2	450
UN0805-210H	12	16	21	19-23	80	35	2	500
UN0805-240H	14	18	24	22-27	80	38	2	350
UN0805-270H	17	22	27	24-30	80	42	2	350
UN0805-300H	19	24	30	27-33	80	48	2	350
UN0805-330H	20	26	33	29-36	80	54	2	350
UN0805-360H	22	28	36	32-39	80	59	2	350
UN0805-390H	24	30	39	35-42	80	65	2	350
UN0805-420H	26	33	42	38-46	80	72	2	350
UN0805-470H	28	36	47	42-52	80	77	2	350
UN0805-560H	35	45	56	50.4-61.6	80	90	2	195

Reference Data

Symbol	Parameter	Value	Units
E	Maximum Energy Absorption 10/1000μs	0.3	J
T_J	Operating ambient temperature	-40~+125	°C
T_{STG}	Storage Temperature Range	-40~+125	°C
T_L	Reflow temperature profile(Recommend)	260	°C
T_{rise}	Response time	<2	ns
I_L	Leakage current at V DC (At initial state)	<50	μA
I_{LA}	Leakage current at V Dc (After reliability Test)	<100	μA

Surge Wave Form



SEVERITY LEVEL	T1	T2
1	8 uS	20 uS
2	10 uS	1000 uS

8/20μs waveform current

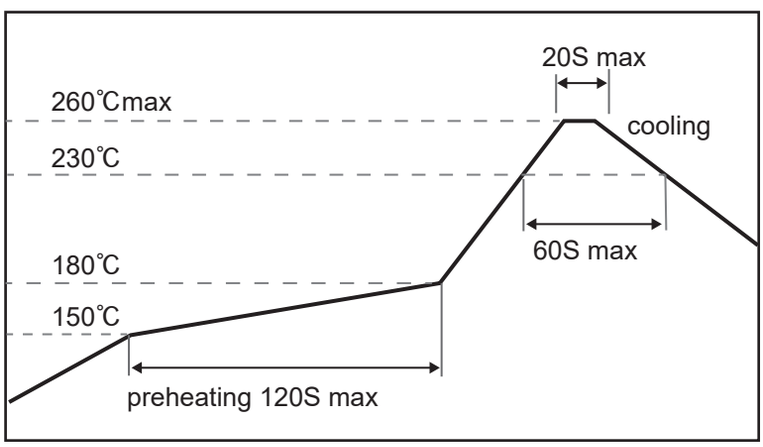
Environmental Reliability Test

Characteristic	Test method and description			
High Temperature Storage	The specimen shall be subjected to 125℃ for 1000 hours in a thermostatic bath without load and then stored at room temperature and humidity for 1 to 2 hours. The change of varistor voltage shall be within 10%.			
Temperature Cycle	The temperature cycle of specified temperature shall be repeated five times and then stored at room temperature and humidity for one two hours. The change of varistor voltage shall be within 10%and mechanical damage shall be examined.	Step	Temperature	Period
		1	-40±3℃	30 min±3
		2	RoomTemp	1~2hours
		3	125±2℃	30 min±3
		4	RoomTemp	1~2hours
High Temperature Load	After being continuously applied the maximum allowable voltage at 85℃ for 1000hours, the specimen shall be stored at room temperature and humidity for one or hours, the change of varistor voltage shall be within 10%.			
Damp Heat Load/ Humidity Load	The specimen should be subjected to 40℃,90 to 95%RH environment, and the maximum allowable voltage applied for 1000 hours, then stored at room temperature and humidity for one or two hours. The change of varistor voltage shall be within 10%.			
Low Temperature Storage	The specimen should be subjected to -40℃, without load for 1000 hours and then stored at room temperature for one two hours. The change of varistor voltage shall be within 10%.			

Soldering Recommendation

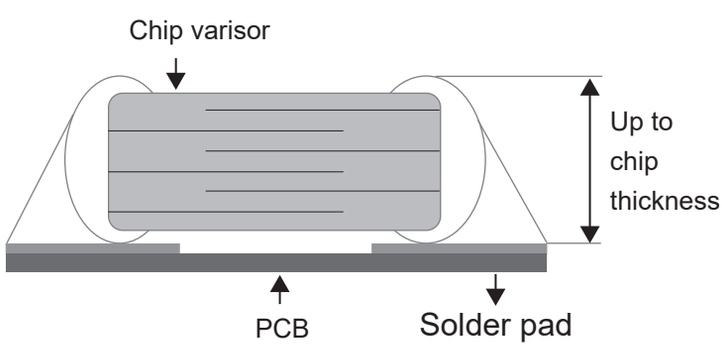
The principal techniques used for the soldering of components in surface mount technology are infrared reflow and wave soldering.

Pb free solder paste



Repair soldering

1. Allowable time and temperature for making correction with a soldering iron: 350 ± 10℃, 3 sec.
2. Optimum solder amount when corrections are made using a soldering iron

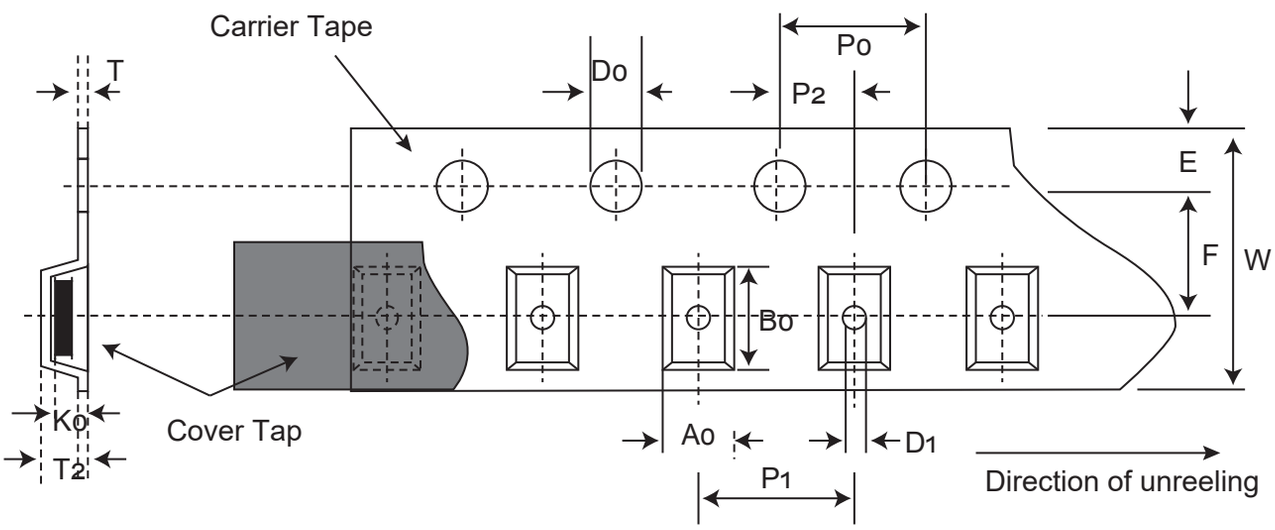


Soldering guideline

1. Our chip varistors are designed for reflow soldering only. Do not use flow soldering
2. Use non-activated flux (Cl content 0.2% max.)
3. Follow the recommended soldering conditions to avoid varistor damage.

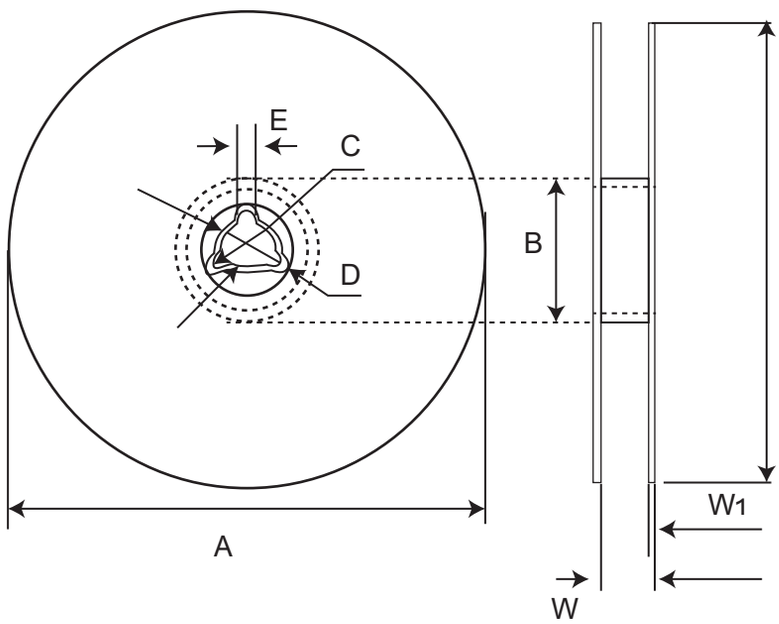
Packaging Specification

- Carrier tape transparent cover tape should be heat-sealed to carry the products, and the reel should be used to reel the carrier tape.
- The adhesion of the heat-sealed cover tape shall be 40 + 20/ − 15 grams.
- Both the head and the end portion of taping shall be empty for reel package and SMT auto-pickup machine. And a normal paper tape shall be connected in the head of taping for the operator handle.



Type	Ao ±0.10	Bo ±0.10	Ko ±0.10	T ±0.05	T2 ±0.05	Do +0.10	D1 ±0.05	P1 ±0.10	P2 ±0.05	P0 ±0.05	W ±0.20	E ±0.10	F ±0.05
0402	1.08	1.88	1.04	0.22	0.87	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
0603	1.08	1.88	1.04	0.22	1.17	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
0805	1.42	2.30	1.04	0.22	1.26	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
1206	1.88	3.50	1.27	0.20	1.49	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
1210	2.18	3.46	1.45	0.22	1.77	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
1812	3.66	4.95	1.74	0.25	1.99	1.50	1.50	8.00	2.00	4.00	12.00	1.75	5.50
2220	5.10	5.97	2.80	0.25	3.05	1.50	1.50	8.00	2.00	4.00	12.00	1.75	5.50
3220	5.50	8.50	2.80	0.30	3.50	1.50	1.50	8.00	2.00	4.00	16.00	1.75	7.50

Reel Dimensions



Type	A	B	C	D	E	W	W1
0402-1210	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0.5	1.5±0.15
1812-3220	178.0±1.0	60.0±0.5	13.5±0.1	21.0±0.2	2.0±0.5	13.6±0.2	1.5±0.15

Type		0402	0603	0805		1206	1210	1812	2220	3220
Quantity	Paper	10K	4K	4K	-	-	-	-	-	-
	Plastic	-	-	-	3K	3K	12V~210V:3K 240V~470V:2K	1K	1K	1K

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