Metal Oxide Varistor (MOV)

Features

- Available in 8.5mm, 16mm, and 23mm
- Increased power dissipation
- Low leakage
- Low overshoot characteristics
- High suppression capability

Applications

- Protect equipment from external transients on AC power lines and transients on telephone/signal lines
- Protect semiconductor components from transients caused by external equipment like motors, transformers, relay coils and solenoids

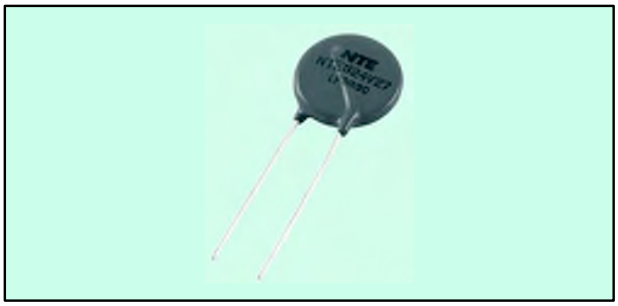
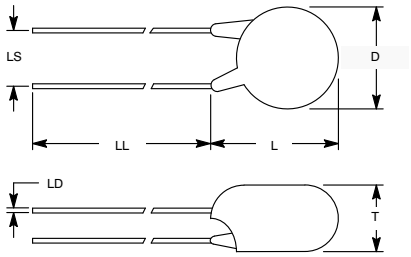


Diagram 192/301/302



Dimensions (in/mm)

Diag. No.	D	L	T	LL	LS	LD
192	.945 (24.0)	1.230 (31.0)	.291 (7.4)	1.063 (27.0)	.394 (10.0)	.039 (1.0)
301	.345 (9.0)	.475 (12.07)	.235 (5.96)	1.000 (25.4)	.200 (5.08)	.024 (0.6)
302	.699 (17.75)	.787 (20.0)	.275 (7.0)	1.000 (25.4)	.315 (8.0)	.031 (0.78)

Note 1. All dimensions are “Maximum” except “LD”.

Specifications

NTE Type Number	Diagram Number/ Case Diameter	Maximum Ratings (T_A = 25°C)				Characteristics		
		Continuous		Transient				
		RMS Voltage (Volts)	DC Voltage (Volts)	Energy (10/1000μs) (Joules)	Peak Current (8/20μs) (Amps)	Nominal Varistor Voltage @ 1mA DC Test Current (Volts)	Maximum Clamping Voltage, V_C @ Test Current (8/20μs) (Volts)	Transient Power Dissipation (Watts)
		V_m (AC)	V_m (DC)	W_{TM}	I_{TM}	V_{NOM}	V_{CL}	P_D
1V010	301 (8.5mm)	10	12	0.8	250	18	45	0.25
2V010	302 (16mm)	10	12	3.5	1000	18	45	0.60
1V014	301 (8.5mm)	14	18	1.2	250	22	55	0.25
2V014	302 (16mm)	14	18	4.0	1000	22	55	0.60
1V015	301 (8.5mm)	15	20	1.0	250	24	52	0.25
2V015	302 (16mm)	15	20	4.5	1000	24	48	0.60
1V017	301 (8.5mm)	17	22	1.3	250	27	60	0.25
2V017	302 (16.mm)	17	22	5.0	1000	27	60	0.60
1V020	301 (8.5mm)	20	26	1.5	250	33	70	0.25
2V020	302 (16mm)	20	26	6.0	1000	33	70	0.60
1V025	301 (8.5mm)	25	31	1.7	250	39	80	0.25
2V025	302 (16mm)	25	31	7.0	1000	39	80	0.60
1V030	301 (8.5mm)	30	38	2.3	250	47	95	0.25
2V030	302 (16mm)	30	38	8.5	1000	47	95	0.60
1V035	301 (8.5mm)	35	45	2.7	250	56	110	0.25
2V035	302 (16mm)	35	45	10.0	1000	56	110	0.60
1V040	301 (8.5mm)	43	55	3.2	250	68	135	0.25
2V040	302 (16mm)	43	55	13.0	1000	68	135	0.60
1V050	301 (8.5mm)	52	66	4.0	250	82	150	0.25
2V050	302 (16mm)	52	66	14.0	1000	82	150	0.60
1V060	301 (8.5mm)	63	80	6.0	1200	100	175	0.25
2V060	302 (16mm)	63	80	18.0	4500	100	175	0.60
1V075	301 (8.5mm)	75	95	5.0	1200	120	205	0.25
2V075	302 (16mm)	75	95	21.0	4500	120	205	0.60

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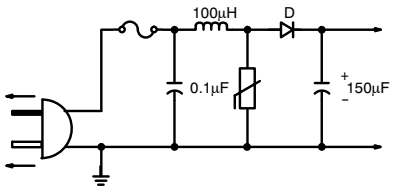
Metal Oxide Varistor (MOV) (Continued)

Specifications (Cont'd)

NTE Type Number	Diagram Number/ Case Diameter	Maximum Ratings (T_A = 25°C)				Characteristics		
		Continuous		Transient				
		RMS Voltage (Volts)	DC Voltage (Volts)	Energy (10/1000μs) (Joules)	Peak Current (8/20μs) (Amps)	Nominal Varistor Voltage @ 1mA DC Test Current (Volts)	Maximum Clamping Voltage, V_C @ Test Current (8/20μs) (Volts)	Transient Power Dissipation (Watts)
		V_m (AC)	V_m (DC)	W_{TM}	I_{TM}	V_{NOM}	V_{CL}	P_D
1V095	301 (8.5mm)	95	125	7.0	1200	150	250	0.25
2V095	302 (16mm)	95	125	29.0	4500	150	250	0.60
1V115	301 (8.5mm)	115	150	10.0	1200	171	295	0.25
2V115	302 (16mm)	115	150	35.0	4500	171	300	0.60
1V130	301 (8.5mm)	135	180	10.0	1200	216	355	0.25
2V130	302 (16mm)	135	180	39.0	4500	216	355	0.60
524V13	192 (23mm)	135	180	72.0	6500	216	355	1.00
1V150	301 (8.5mm)	160	210	10.0	1200	240	410	0.25
2V150	302 (16mm)	160	210	40.0	4500	240	410	0.60
524V15	192 (23mm)	160	210	80.0	6500	240	410	1.00
1V175	301 (8.5mm)	170	225	12.0	1200	270	450	0.25
524V17	192 (23mm)	170	225	90.0	6500	270	450	1.00
1V250	301 (8.5mm)	240	320	20.0	1200	390	630	0.25
2V250	302 (16mm)	240	320	70.0	4500	390	630	0.60
524V25	192 (23mm)	240	320	129.0	6500	390	630	1.00
1V275	301 (8.5mm)	260	330	20.0	1200	430	685	0.25
2V275	302 (16mm)	260	330	72.0	4500	430	685	0.60
524V27	192 (23mm)	260	330	135.0	6500	430	685	1.00
1V300	301 (8.5mm)	280	370	22.0	1200	470	740	0.25
2V300	302 (16mm)	280	370	79.0	4500	470	740	0.60
524V30	192 (23mm)	280	370	149.0	6500	470	740	1.00
2V420	302 (16mm)	420	560	90.0	4500	680	1110	0.60
524V42	192 (23mm)	420	560	160.0	6500	680	1110	1.00
2V480	302 (16mm)	480	640	105.0	4500	750	1240	0.60
524V48	192 (23mm)	480	640	180.0	6500	750	1240	1.00

SELECTING THE PROPER MOV VOLTAGE RATING:

1. **Determine the required voltage rating.**
   First, the maximum steady−state operating voltage of the circuit must be determined. Care must be taken to use the upper tolerance limit of the voltage source, e.g., for a 220VAC line,a 10% high line condition should be assumed, resulting in 242 Volts. Once the level is determined, refer to the column in the data table headed “Maximum Continuous Voltage” and select a group having the nearest greater value to this level.



Typical Power Supply Circuit