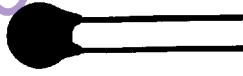


# METAL OXIDE VARISTOR (MOV)



ENC Series  
Radial package



Ratings and characteristics table

Device type	Chip element size	Maximum ratings					Characteristics					
		Applied voltage ①		Transient			Nominal varistor ④ peak voltage			Max clamping ⑤ voltage @ test current (8/20μs)		Typical capacitance
		RMS 50/60Hz (25°C)	DC (25°C)	Energy ②	Average power dissipation	Peak ③ current (8/20μs)				Vc [Volts]	Ip [Amps]	
		Vacm [Volts]	Vdcm [Volts]	Wtm [Joules]	Ptam [Watts]	Itrm [Amps]	Vnom [Volts]	Tolerance				f=1kHz [pF]
Dia [mm]						Min [Volts]	Max [Volts]					
ENC220D-05B	5	14	18	0.4	0.01	125	22	20	24	48	1	1200
ENC220D-07B	7			0.9	0.02	250				43	2.5	2500
ENC220D-10B	10			2.0	0.05	500				43	5	5000
ENC220D-14B	14			4.0	0.1	1000				43	10	11000
ENC220D-20B	20			13.0	0.2	2000				43	20	22000
ENC270D-05B	5	17	22	0.5	0.01	125	27	24	30	60	1	1100
ENC270D-07B	7			1.0	0.02	250				53	2.5	2200
ENC270D-10B	10			2.5	0.05	500				53	5	4500
ENC270D-14B	14			5.0	0.1	1000				53	10	9000
ENC270D-20B	20			15.0	0.2	2000				53	20	18000
ENC330D-05B	5	20	26	0.6	0.01	125	33	30	36	73	1	1000
ENC330D-07B	7			1.2	0.02	250				65	2.5	2000
ENC330D-10B	10			3.0	0.05	500				65	5	4000
ENC330D-14B	14			6.0	0.1	1000				65	10	8000
ENC330D-20B	20			20.0	0.2	2000				65	20	16000
ENC390D-05B	5	25	31	0.8	0.01	125	39	35	43	86	1	800
ENC390D-07B	7			1.5	0.02	250				77	2.5	1600
ENC390D-10B	10			3.5	0.05	500				77	5	3200
ENC390D-14B	14			7.0	0.1	1000				77	10	6500
ENC390D-20B	20			24.0	0.2	2000				77	20	13000
ENC470D-05B	5	30	38	1.0	0.01	125	47	42	52	104	1	700
ENC470D-07B	7			1.8	0.02	250				93	2.5	1400
ENC470D-10B	10			4.5	0.05	500				93	5	2800
ENC470D-14B	14			8.5	0.1	1000				93	10	5500
ENC470D-20B	20			30.0	0.2	2000				93	20	11000
ENC560D-05B	5	35	45	1.0	0.01	125	56	50	62	123	1	600
ENC560D-07B	7			2.2	0.02	250				110	2.5	1300
ENC560D-10B	10			5.5	0.05	500				110	5	2500
ENC560D-14B	14			10.0	0.1	1000				110	10	5000
ENC560D-20B	20			35.0	0.2	2000				110	20	10000
ENC680D-05B	5	40	56	1.2	0.01	125	68	61	75	150	1	500
ENC680D-07B	7			2.5	0.02	250				135	2.5	1000
ENC680D-10B	10			6.5	0.05	500				135	5	2000
ENC680D-14B	14			12.0	0.1	1000				135	10	4000
ENC680D-20B	20			40.0	0.2	2000				135	20	8000
ENC820D-05A	5	50	65	1.7	0.1	250	82	74	90	145	5	400
ENC820D-07A	7			3.5	0.25	600				135	10	800
ENC820D-10A	10			8.0	0.4	1250				135	25	1500
ENC820D-14A	14			14.0	0.6	2500				135	50	3000
ENC820D-20A	20			27.0	1.0	4000				135	100	6000
ENC101D-05A	5	60	85	2.0	0.1	250	100	90	110	175	5	350
ENC101D-07A	7			4.0	0.25	600				165	10	700
ENC101D-10A	10			10.0	0.4	1250				165	25	1500
ENC101D-14A	14			18.0	0.6	2500				165	50	3000
ENC101D-20A	20			30.0	1.0	4000				165	100	6000
ENC121D-05A	5	75	100	2.5	0.1	250	120	108	132	210	5	350
ENC121D-07A	7			5.0	0.25	600				200	10	700
ENC121D-10A	10			12.0	0.4	1250				200	25	1300
ENC121D-14A	14			20.0	0.6	2500				200	50	2600
ENC121D-20A	20			40.0	1.0	4000				200	100	5200
ENC151D-05A	5	95	125	3.0	0.1	250	150	135	165	260	5	250
ENC151D-07A	7			6.0	0.25	600				250	10	500
ENC151D-10A	10			16.0	0.4	1250				250	25	1000
ENC151D-14A	14			25.0	0.6	2500				250	50	2000
ENC151D-20A	20			50.0	1.0	4000				250	100	4000
ENC201D-05A*	5	130	170	4.0	0.1	250	200	185	225	355	5	200
ENC201D-07A*	7			10.0	0.25	600				340	10	400
ENC201D-10A*	10			20.0	0.4	1250				340	25	800
ENC201D-14A*	14			35.0	0.6	2500				340	50	1600
ENC201D-20A*	20			70.0	1.0	4000				340	100	3200
ENC221D-05A*	5	140	180	4.5	0.1	250	220	198	242	380	5	170
ENC221D-07A*	7			10.0	0.25	600				360	10	350
ENC221D-10A*	10			23.0	0.4	1250				360	25	700
ENC221D-14A*	14			40.0	0.6	2500				360	50	1400
ENC221D-20A*	20			75.0	1.0	4000				360	100	2800
ENC241D-05A*	5	150	200	5.0	0.1	250	240	216	264	415	5	170
ENC241D-07A*	7			10.0	0.25	600				395	10	350
ENC241D-10A*	10			25.0	0.4	1250				395	25	700
ENC241D-14A*	14			40.0	0.6	2500				395	50	1300
ENC241D-20A*	20			80.0	1.0	4000				395	100	2600



# METAL OXIDE VARISTOR (MOV)

\* UL Recognized (UL1414) - UL File No. E66188

• UL Recognized (UL1449) - UL File No. E123894

## Ratings and characteristics table

Device type	Chip element size	Maximum ratings					Characteristics					
		Applied voltage ①		Transient			Nominal varistor ④ peak voltage			Max. clamping ⑤ voltage @test current (8/20μs)		Typical capacitance
		RMS 50/60Hz (25°C)	DC (25°C)	Energy ②	Average power dissipation	Peak current ③ (8/20μs)						
Dia [mm]	Vacm [Volts]	Vdcm [Volts]	Wtm [Joules]	Ptam [Watts]	I <sub>tm</sub> [Amps]	V <sub>nom</sub> [Volts]	Tolerance		V <sub>c</sub> [Volts]	I <sub>p</sub> [Amps]	f = 1kHz [pF]	
							Min [Volts]	Max [Volts]				
ENC271D-05A*	5	175	225	6.0	0.1	250	270	247	303	475	5	150
ENC271D-07A*	7			12.0	0.25	600				455	10	300
ENC271D-10A*	10			30.0	0.4	1250				455	25	600
ENC271D-14A*	14			50.0	0.6	2500				455	50	1200
ENC271D-20A*	20			90.0	1.0	4000				455	100	2400
ENC361D-05A*	5	230	300	7.5	0.1	250	360	324	396	620	5	120
ENC361D-07A*	7			15.0	0.25	600				595	10	250
ENC361D-10A*	10			35.0	0.4	1250				595	25	500
ENC361D-14A*	14			65.0	0.6	2500				595	50	1000
ENC361D-20A*	20			120.0	1.0	4000				595	100	2000
ENC391D-05A*	5	250	320	8.0	0.1	250	390	351	429	675	5	110
ENC391D-07A*	7			17.0	0.25	600				650	10	220
ENC391D-10A*	10			40.0	0.4	1250				650	25	450
ENC391D-14A*	14			70.0	0.6	2500				650	50	900
ENC391D-20A*	20			130.0	1.0	4000				650	100	1800
ENC431D-05A*	5	275	350	9.0	0.1	250	430	387	473	745	5	100
ENC431D-07A*	7			20.0	0.25	600				710	10	200
ENC431D-10A*	10			45.0	0.4	1250				710	25	400
ENC431D-14A*	14			75.0	0.6	2500				710	50	800
ENC431D-20A*	20			140.0	1.0	4000				710	100	1600
ENC471D-05A*	5	300	385	10.0	0.1	250	470	423	517	810	5	80
ENC471D-07A*	7			20.0	0.25	600				775	10	170
ENC471D-10A*	10			45.0	0.4	1250				775	25	350
ENC471D-14A*	14			80.0	0.6	2500				775	50	700
ENC471D-20A*	20			150.0	1.0	4000				775	100	1400
ENC621D-10A*	10	385	505	45.0	0.4	1250	620	558	682	1025	25	270
ENC621D-14A*	14			85.0	0.6	2500				1025	50	550
ENC621D-20A*	20			150.0	1.0	4000				1025	100	1100
ENC681D-10A*	10	420	560	45.0	0.4	1250	680	612	748	1120	25	250
ENC681D-14A*	14			90.0	0.6	2500				1120	50	500
ENC681D-20A*	20			160.0	1.0	4000				1120	100	1000
ENC751D-10A*	10	460	615	50.0	0.4	1250	750	675	825	1240	25	220
ENC751D-14A*	14			100.0	0.6	2500				1240	50	450
ENC751D-20A*	20			175.0	1.0	4000				1240	100	900
ENC781D-10A*	10	485	640	50.0	0.4	1250	780	702	858	1290	25	220
ENC781D-14A*	14			105.0	0.6	2500				1290	50	440
ENC781D-20A*	20			180.0	1.0	4000				1290	100	880
ENC821D-10A*	10	510	670	55.0	0.4	1250	820	738	902	1355	25	210
ENC821D-14A*	14			110.0	0.6	2500				1355	50	420
ENC821D-20A*	20			190.0	1.0	4000				1355	100	840
ENC911D-10A*	10	550	745	60.0	0.4	1250	910	819	1001	1500	25	180
ENC911D-14A*	14			120.0	0.6	2500				1500	50	380
ENC911D-20A*	20			215.0	1.0	4000				1500	100	750
ENC102D-10A*	10	625	825	65.0	0.4	1250	1000	900	1100	1650	25	180
ENC102D-14A*	14			130.0	0.6	2500				1650	50	350
ENC102D-20A*	20			230.0	1.0	4000				1650	100	700
ENC112D-10A*	10	680	895	70.0	0.4	1250	1100	990	1210	1815	25	150
ENC112D-14A*	14			140.0	0.6	2500				1815	50	300
ENC112D-20A*	20			250.0	1.0	4000				1815	100	600
ENC182D-14A*	14	1000	1465	240.0	0.6	2500	1800	1620	1980	2970	50	200
ENC182D-20A*	20			400.0	1.0	4000				2970	100	400

### Notes

① The waveform of the maximum DC applied voltage is flat. When a ripple voltage as from a rectifier source is applied, make sure that the peak voltage is within the V<sub>dcm</sub> rating.

The AC applied voltage (50/60Hz) is a sine waveform. When waveform distortion is extensive, make sure that the peak voltage is less than  $\sqrt{2}$  times the V<sub>acm</sub> rating.

② Energy: W<sub>tm</sub>

Transient energy ratings are given in the W<sub>tm</sub> column in Joules (watt-second). The rating is the maximum allowable energy of a single 2ms square-waveform impulse current continuously applied. Energy ratings are based on a shift of V<sub>nom</sub> of less than ± 10% of the initial value.

③ Transient peak current (I<sub>tm</sub>)

The peak current rating, I<sub>tm</sub>, is based on 8/20μs test impulse waveform. This peak current is the maximum peak current at which the nominal varistor voltage shift does not exceed ± 10% when the test impulse is applied twice at a 5 minute interval.

④ Nominal varistor voltage: V<sub>nom</sub>

Indicates the varistor terminal voltage measured with 1mA DC applied.

⑤ Maximum clamping voltage: V<sub>c</sub>

Indicates the peak terminal voltage measured with 8/20μs impulse current applied.

Operating ambient temperature: -40°C to +85°C

Storage temperature: -40°C to +125°C