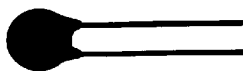


METAL OXIDE VARISTOR (MOV)



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)						
	Dia [mm]	Vacm [Volts]	Vdcm [Volts]	Wtm [Joules]	Ptam [Watts]	I _{tm} [Amps]	V _{nom} [Volts]	Tolerance		V _c [Volts]	I _p [Amps]	f=1kHz [pF]
								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)

Ratings and characteristics table

* UL Recognized (UL1414) - UL File No. E66188
• UL Recognized (UL1449) - UL File No. E123894

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

Notes

①The 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 Vdcm 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 Vacm rating.
②Energy: Wtm
Transient energy ratings are given in the Wtm 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 Vnom of less than $\pm 10\%$ of the initial value.
③Transient peak current (Itrm)
The peak current rating, Itrm, 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 $\pm 10\%$ when the test impulse is applied twice at a 5 minute interval.

④Nominal varistor voltage: Vnom
Indicates the varistor terminal voltage measured with 1mA DC applied.
⑤Maximum clamping voltage: Vc
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