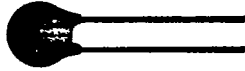




# Z-TRAP SURGE SUPPRESSORS

## 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 capaci- tance
		RMS 50/60Hz (25°C)	DC (25°C)	Energy ②	Average power dissipa- tion	Peak ③ current (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]
							Min. [Volts]	Max. [Volts]				
ENC180D-05B	5	11	14	0.3	0.01	125	18	16	20	40	1	1700
ENC180D-07B	7			0.8	0.02	250				36	2.5	3500
ENC180D-10B	10			1.5	0.05	500				36	5	7000
ENC180D-14B	14			3.5	0.1	1000				36	10	14000
ENC180D-20B	20			10.0	0.2	2000				36	20	28000
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

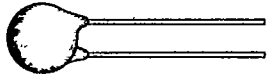
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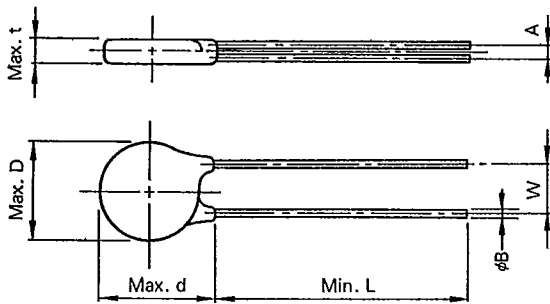
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**ENC Series**  
**Radial package**



DB & DA type

**Dimensions, mm**

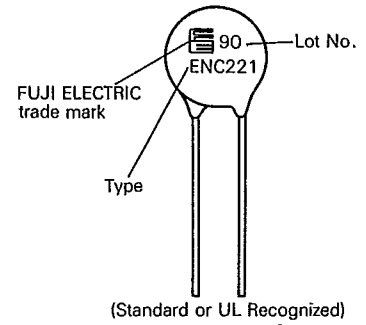
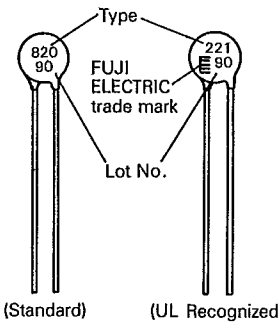


Lead wire: High temperature solder plated mild copper wire  
Molded material: Flame resistant epoxy resin (UL, 94V-0 equivalent)

**Marking**

● Chip element size Dia. 5, 7mm

● Chip element size Dia. 10, 14, 20mm



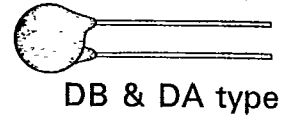
**DB type**

Type	t	A	D	d	L	W	φB	Net weight (g)
ENC220D-05B	4.5	1.7±1	7.5	10.0	35	5.0±1	0.6	0.5
ENC270D-05B	4.5	1.7±1	7.5	10.0	35	5.0±1	0.6	0.5
ENC330D-05B	4.5	1.7±1	7.5	10.0	35	5.0±1	0.6	0.5
ENC390D-05B	4.5	1.7±1	7.5	10.0	35	5.0±1	0.6	0.5
ENC470D-05B	4.5	1.7±1	7.5	10.0	35	5.0±1	0.6	0.5
ENC560D-05B	4.5	1.7±1	7.5	10.0	35	5.0±1	0.6	0.5
ENC680D-05B	4.5	1.7±1	7.5	10.0	35	5.0±1	0.6	0.5
ENC220D-07B	4.5	1.7±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC270D-07B	4.5	1.7±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC330D-07B	4.5	1.7±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC390D-07B	4.5	1.7±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC470D-07B	4.5	1.7±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC560D-07B	4.5	1.7±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC680D-07B	4.5	1.7±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC220D-10B	4.7	1.9±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC270D-10B	4.8	2.2±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC330D-10B	5.0	1.6±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC390D-10B	5.0	1.8±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC470D-10B	5.0	2.0±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC560D-10B	5.0	1.7±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC680D-10B	5.3	1.9±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC220D-14B	4.7	1.9±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC270D-14B	4.8	2.2±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC330D-14B	5.0	1.6±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC390D-14B	5.0	1.8±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC470D-14B	5.0	2.0±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC560D-14B	5.0	1.7±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC680D-14B	5.3	1.9±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC220D-20B	5.2	2.1±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC270D-20B	5.3	2.4±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC330D-20B	5.5	1.8±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC390D-20B	5.5	2.0±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC470D-20B	5.6	2.2±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC560D-20B	5.7	1.9±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC680D-20B	5.8	2.1±1	23.0	27.0	30	10.0±1	1.0	3.5

**DA type**

Type	t	A	D	d	L	W	φB	Net weight (g)
ENC820D-05A	4.5	1.7±1	7.0	10.0	35	5.0±1	0.6	0.5
ENC101D-05A	4.7	1.5±1	7.0	10.0	35	5.0±1	0.6	0.5
ENC121D-05A	4.8	1.5±1	7.0	10.0	35	5.0±1	0.6	0.5
ENC151D-05A	5.0	1.5±1	7.0	10.0	35	5.0±1	0.6	0.5
ENC201D-05A	5.2	2.0±1	7.0	10.0	35	5.0±1	0.6	0.5
ENC221D-05A	5.3	2.0±1	7.0	10.0	35	5.0±1	0.6	0.5
ENC241D-05A	5.4	2.0±1	7.0	10.0	35	5.0±1	0.6	0.5
ENC271D-05A	5.6	2.2±1	7.0	10.0	35	5.0±1	0.6	0.6
ENC361D-05A	6.2	3.0±1	7.0	10.0	35	5.0±1	0.6	0.6
ENC391D-05A	6.4	3.0±1	7.0	10.0	35	5.0±1	0.6	0.6
ENC431D-05A	6.7	3.5±1	7.0	10.0	35	5.0±1	0.6	0.6
ENC471D-05A	7.0	3.5±1	7.0	10.0	35	5.0±1	0.6	0.6
ENC820D-07A	4.5	1.7±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC101D-07A	4.7	1.5±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC121D-07A	4.8	1.5±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC151D-07A	5.0	1.5±1	9.0	12.0	35	5.0±1	0.6	0.6
ENC201D-07A	5.2	2.0±1	9.0	12.0	35	5.0±1	0.6	0.7
ENC221D-07A	5.3	2.0±1	9.0	12.0	35	5.0±1	0.6	0.7
ENC241D-07A	5.4	2.0±1	9.0	12.0	35	5.0±1	0.6	0.7
ENC271D-07A	5.6	2.2±1	9.0	12.0	35	5.0±1	0.6	0.7
ENC361D-07A	6.2	3.0±1	9.0	12.0	35	5.0±1	0.6	0.8
ENC391D-07A	6.4	3.0±1	9.0	12.0	35	5.0±1	0.6	0.8
ENC431D-07A	6.7	3.5±1	9.0	12.0	35	5.0±1	0.6	1.0
ENC471D-07A	7.0	3.5±1	9.0	12.0	35	5.0±1	0.6	1.0
ENC820D-10A	5.0	2.2±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC101D-10A	5.1	1.5±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC121D-10A	5.2	1.6±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC151D-10A	5.5	1.8±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC201D-10A	5.6	2.1±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC221D-10A	5.7	2.3±1	13.5	16.5	35	7.5±1	0.8	1.5
ENC241D-10A	5.8	2.4±1	13.5	16.5	35	7.5±1	0.8	1.7
ENC271D-10A	6.1	2.6±1	13.5	16.5	35	7.5±1	0.8	1.7
ENC361D-10A	6.7	3.2±1	14.0	17.0	35	7.5±1	0.8	2.0
ENC391D-10A	6.8	3.4±1	14.0	17.0	35	7.5±1	0.8	2.2
ENC431D-10A	7.2	3.7±1	14.0	17.0	35	7.5±1	0.8	2.3
ENC471D-10A	7.5	3.9±1	14.0	17.0	35	7.5±1	0.8	2.4
ENC621D-10A	7.2	4.1±1	14.0	17.0	35	7.5±1	0.8	2.6
ENC681D-10A	7.5	4.4±1	14.0	17.0	35	7.5±1	0.8	2.8
ENC751D-10A	8.0	4.8±1	14.0	17.0	35	7.5±1	0.8	3.0
ENC781D-10A	8.2	5.0±1	14.0	17.0	35	7.5±1	0.8	3.2

T-91-20  
ENC Series  
Radial package

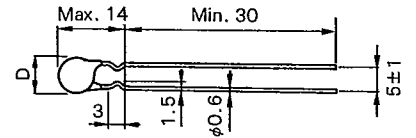


■ DA type

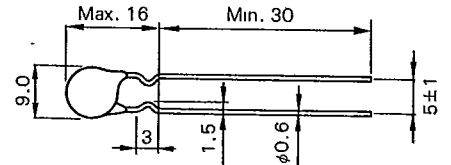
Type	t	A	D	d	L	W	φB	Net weight (g)
ENC821D-20A	8.5	5.2±1	14.0	17.0	30	7.5±1	0.8	3.2
ENC911D-20A	9.0	5.7±1	14.0	17.0	30	7.5±1	0.8	3.4
ENC102D-20A	9.5	6.2±1	14.0	17.0	30	7.5±1	0.8	3.6
ENC112D-20A	10.5	6.7±1	14.0	17.0	30	7.5±1	0.8	4.0
ENC820D-14A	5.0	2.2±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC101D-14A	5.1	1.5±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC121D-14A	5.2	1.6±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC151D-14A	5.5	1.8±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC201D-14A	5.6	2.1±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC221D-14A	5.7	2.3±1	17.0	20.0	35	7.5±1	0.8	2.5
ENC241D-14A	5.8	2.4±1	17.0	20.0	35	7.5±1	0.8	3.0
ENC271D-14A	6.1	2.6±1	17.0	20.0	35	7.5±1	0.8	3.5
ENC361D-14A	6.7	3.2±1	17.5	21.0	35	7.5±1	0.8	4.0
ENC391D-14A	6.8	3.4±1	17.5	21.0	35	7.5±1	0.8	4.0
ENC431D-14A	7.2	3.7±1	17.5	21.0	35	7.5±1	0.8	4.5
ENC471D-14A	7.5	3.9±1	17.5	21.0	35	7.5±1	0.8	4.5
ENC621D-14A	7.2	4.1±1	17.5	21.0	35	7.5±1	0.8	5.0
ENC681D-14A	7.5	4.4±1	17.5	21.0	35	7.5±1	0.8	5.5
ENC751D-14A	8.0	4.8±1	17.5	21.0	35	7.5±1	0.8	6.0
ENC781D-14A	8.2	5.0±1	17.5	21.0	35	7.5±1	0.8	6.5
ENC821D-14A	8.5	5.2±1	17.5	21.0	35	7.5±1	0.8	6.5
ENC911D-14A	9.0	5.7±1	17.5	21.0	35	7.5±1	0.8	6.5
ENC102D-14A	9.5	6.2±1	17.5	21.0	35	7.5±1	0.8	7.0
ENC112D-14A	10.5	6.7±1	17.5	21.0	35	7.5±1	0.8	7.5
ENC182D-14A	15.0	9.5±2	17.5	22.0	35	7.5±1	0.8	11.5
ENC820D-20A	5.5	2.4±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC101D-20A	5.6	1.7±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC121D-20A	5.7	1.8±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC151D-20A	5.9	2.0±1	23.0	27.0	30	10.0±1	1.0	3.5
ENC201D-20A	6.0	2.3±1	23.0	27.0	30	10.0±1	1.0	4.0
ENC221D-20A	6.2	2.5±1	23.0	27.0	30	10.0±1	1.0	4.5
ENC241D-20A	6.3	2.6±1	23.0	27.0	30	10.0±1	1.0	4.5
ENC271D-20A	6.5	2.8±1	23.0	27.0	30	10.0±1	1.0	5.0
ENC361D-20A	7.2	3.4±1	24.0	28.0	30	10.0±1	1.0	6.0
ENC391D-20A	7.4	3.6±1	24.0	28.0	30	10.0±1	1.0	6.5
ENC431D-20A	7.7	3.9±1	24.0	28.0	30	10.0±1	1.0	7.0
ENC471D-20A	8.0	4.1±1	24.0	28.0	30	10.0±1	1.0	7.5
ENC621D-20A	8.0	4.3±1	24.0	28.0	30	10.0±1	1.0	8.0
ENC681D-20A	8.2	4.6±1	24.0	28.0	30	10.0±1	1.0	9.0
ENC751D-20A	8.5	5.0±1	24.0	28.0	30	10.0±1	1.0	9.5
ENC781D-20A	8.6	5.3±1	24.0	28.0	30	10.0±1	1.0	10.0
ENC821D-20A	8.8	5.4±1	24.0	28.0	30	10.0±1	1.0	10.0
ENC911D-20A	9.3	5.9±1	24.0	28.0	30	10.0±1	1.0	11.0
ENC102D-20A	9.7	6.3±1	24.0	28.0	30	10.0±1	1.0	12.0
ENC112D-20A	10.8	6.9±1	24.0	28.0	30	10.0±1	1.0	13.0
ENC182D-20A	15.5	10.0±2	25.0	30.0	30	10.0±1	1.0	20.0

■ Crimped leads type

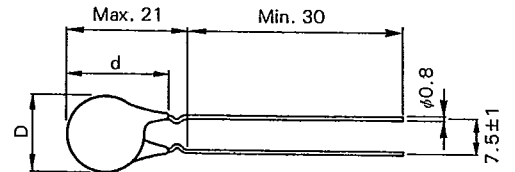
●05A, 05B



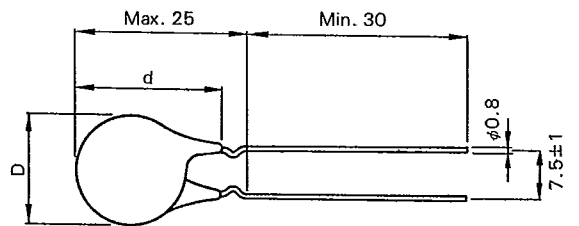
●07A, 07B



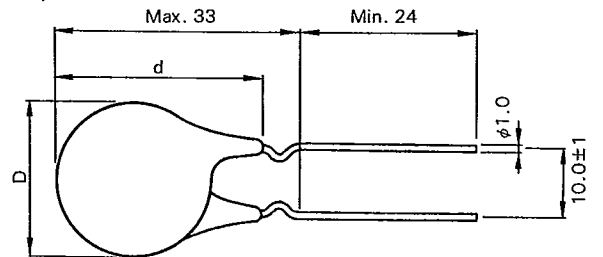
●10A, 10B



●14A, 14B



●20A, 20B



Detail of crimped leads

