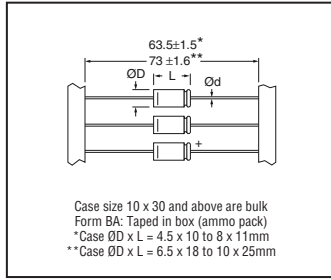


**Axial Standard Miniature Electrolytic Capacitors**

**Features:** • Polarized aluminum electrolytic capacitors, non-solid • Axial leads, cylindrical aluminum case, insulated with a blue sleeve • Charge and discharge proof  
 • Case Ø10mm x 30mm to 21mm x 40mm with pressure relief • Taped versions up to case Ø15mm x 30mm available for automatic insertion • Miniaturized, high CV-product per unit volume

**Applications:** • General purpose, industrial, automotive, audio-video • Coupling, decoupling, smoothing, filtering, buffering and timing • Portable and mobile equipment (small size, low mass) • Low mounting height boards, vibration and shock resistant.



DESCRIPTION	VALUE	
Case sizes (ØDnom x Lnom in mm)	4.5 x 10 - 10 x 25	10 x 30 - 21 x 40
Rated capacitance range, CR	0.47 - 15,000µF	
Tolerance on CR	±20%	
Rated voltage range, UR	6.3 - 100V	
Category temperature range	-40°C - 85°C	
Endurance test at 85°C:		
UR = 6.3 - 25V	1,000 hours	5,000 hours
UR = 40 - 100V	2,000 hours	5,000 hours
Useful life at 85°C:		
UR = 6.3 - 25V	2,500 hours	8,000 hours
UR = 40 - 100V	70,000 hours	200,000 hours
Useful life at 40°C, 1.4 x IR applied	70,000 hours	200,000 hours
Shelf life at 0 V, 85°C:	500 hours	500 hours
Based on sectional specification:	IEC 384-4/CECC 30300	IEC384-4/CECC 30300
UR = 6.3 - 25V	GP grade	LL grade
UR = 40 - 100V	LL grade	LL grade
Climatic category IEC 68 (DIN 40040)	40/085/56 (GPF)	

WV (VDC)	Cap. (µF)	Leakage Curr. (µA)	tan δ	Ripple Curr. (mA)	Dimensions - mm			Digi-Key Part No.	Cut Tape Pricing 10	Digi-Key Part No.	Tape and Box Pricing			Vishay Part No.	
					L	D	d				500	1,000	2,500		
6.3	470	22	0.250	260	11	8.0	0.6	4000PHCT-ND	1.65	13.52	4000PHTB-ND	280.54	494.87	462.33/M	MAL202133471E3
	1000	42	0.250	440	18	8.0	0.8	4001PHCT-ND	1.90	15.55	—	—	—	—	MAL202133102E3
	2200	87	0.290	710	25	10	0.8	4002PHCT-ND	2.76	22.63	4002PHTB-ND	469.06	828.15	773.17/M	MAL202190589E3
10	100	10	0.200	100	10	4.5	0.6	4003PHCT-ND	1.32	11.08	4003PHTB-ND	—	365.82	—	MAL202134101E3
	220	17	0.200	160	10	6.0	0.6	4004PHCT-ND	1.47	12.23	4004PHTB-ND	—	403.98	—	MAL202134221E3
	330	24	0.200	230	11	8.0	0.6	4005PHCT-ND	1.65	13.52	4005PHTB-ND	280.54	494.87	462.33/M	MAL202134331E3
	470	34	0.200	310	18	6.5	0.8	4006PHCT-ND	1.65	13.52	4006PHTB-ND	—	494.87	—	MAL202134471E3
	1000	64	0.200	550	18	10	0.8	4008PHCT-ND	2.18	17.81	4008PHTB-ND	369.19	651.97	608.22/M	MAL202134102E3
	3300	202	0.270	1090	30	12.5	0.8	4012PHBK-ND	2.83	22.87	—	665.22	1164.13	1122.56/M	MAL202114332E3
	4700	286	0.290	1320	30	15	0.8	4013PHBK-ND	3.28	26.54	—	772.05	1351.08	1302.83/M	MAL202114472E3
	68	11	0.160	90	10	4.5	0.6	4017PHCT-ND	1.32	11.08	4017PHTB-ND	—	365.82	—	MAL202135689E3
	150	18	0.160	140	10	6.0	0.6	4018PHCT-ND	1.47	12.23	4018PHTB-ND	—	403.98	—	MAL202135151E3
	220	25	0.160	210	11	8.0	0.6	4019PHCT-ND	1.65	13.52	4019PHTB-ND	280.54	494.87	462.33/M	MAL202135221E3
16	330	36	0.160	290	18	6.5	0.8	4020PHCT-ND	1.65	13.52	4020PHTB-ND	—	494.87	—	MAL202135331E3
	470	49	0.160	380	18	8.0	0.8	4021PHCT-ND	1.90	15.55	4021PHTB-ND	322.62	568.94	530.78/M	MAL202135471E3
	680	69	0.160	500	18	10	0.8	4022PHCT-ND	2.18	17.81	4022PHTB-ND	369.19	651.97	608.22/M	MAL202135681E3
	1000	100	0.160	660	25	10	0.8	4023PHCT-ND	2.76	22.63	4023PHTB-ND	469.06	828.15	773.17/M	MAL202190518E3
	1000	100	0.160	700	30	10	0.8	4024PHBK-ND	2.23	18.06	—	525.17	919.05	886.23/M	MAL202115102E3
	2200	216	0.210	1040	30	12.5	0.8	4026PHBK-ND	2.81	22.71	—	660.73	1156.27	1114.98/M	MAL202115222E3
	3300	321	0.230	1290	30	15	0.8	4027PHBK-ND	3.36	27.10	—	788.21	1379.36	1330.10/M	MAL202115332E3
	4700	455	0.250	1560	30	18	0.8	4028PHBK-ND	3.67	29.60	—	858.32	1598.24	1539.05/M	MAL202115472E3
	6800	656	0.300	2040	38	18	0.8	4029PHBK-ND	4.60	37.12	—	1076.35	2004.23	1930.01/M	MAL202115682E3
	10000	964	0.360	2170	38	21	0.8	4030PHBK-ND	4.86	43.75	—	1361.29	2528.11	2479.50/M	MAL202115103E3
25	47	11	0.140	80	10	4.5	0.6	4031PHCT-ND	1.32	11.08	4031PHTB-ND	—	365.82	—	MAL202136479E3
	100	19	0.140	150	10	6.0	0.6	4032PHCT-ND	1.47	12.23	4032PHTB-ND	—	403.98	—	MAL202136101E3
	150	27	0.140	210	18	6.5	0.8	4034PHCT-ND	1.65	13.52	4034PHTB-ND	—	494.87	—	MAL202136151E3
	220	37	0.140	250	18	6.5	0.8	4035PHCT-ND	1.65	13.52	4035PHTB-ND	—	494.87	—	MAL202136221E3
	330	54	0.140	340	18	8.0	0.8	4036PHCT-ND	1.90	15.55	4036PHTB-ND	322.62	568.94	530.78/M	MAL202136331E3
	470	75	0.140	450	18	10	0.8	4037PHCT-ND	2.18	17.81	4037PHTB-ND	369.19	651.97	608.22/M	MAL202136471E3
	680	106	0.140	560	25	10	0.8	4038PHCT-ND	2.76	22.63	4038PHTB-ND	469.06	828.15	773.17/M	MAL202190528E3
	1000	154	0.140	840	30	12.5	0.8	4040PHBK-ND	2.47	19.94	—	579.93	1014.88	978.64/M	MAL202116102E3
	1500	229	0.170	950	30	12.5	0.8	4041PHBK-ND	2.83	22.87	—	665.22	1164.13	1122.56/M	MAL202116152E3
	2200	334	0.190	1180	30	15	0.8	4042PHBK-ND	3.32	26.85	—	781.02	1367.79	1317.98/M	MAL202116222E3
40	3300	499	0.210	1470	30	18	0.8	4043PHBK-ND	3.74	30.16	—	874.59	1628.53	1568.22/M	MAL202116332E3
	4700	709	0.230	1920	38	18	0.8	4328PHBK-ND	4.45	35.91	—	1041.36	1939.09	1867.28/M	MAL202190062E3
	6800	1024	0.280	2070	38	21	0.8	4045PHBK-ND	4.85	43.65	—	1358.15	2522.28	2473.78/M	MAL202116682E3
	22	9.0	0.110	60	10	4.5	0.6	4046PHCT-ND	1.32	11.08	4046PHTB-ND	—	365.26	—	MAL202137229E3
	47	15	0.110	110	10	6.0	0.6	4047PHCT-ND	1.47	12.23	4047PHTB-ND	—	403.98	—	MAL202137479E3
	100	28	0.110	170	11	8.0	0.6	4048PHCT-ND	1.65	13.52	4048PHTB-ND	280.54	494.87	462.33/M	MAL202190538E3
	100	28	0.110	190	18	6.5	0.8	4049PHCT-ND	1.65	13.52	4049PHTB-ND	—	494.87	—	MAL202137101E3
	150	40	0.110	250	18	8.0	0.8	4050PHCT-ND	1.90	15.55	4050PHTB-ND	322.62	568.94	530.78/M	MAL202137151E3
	220	57	0.110	330	18	10	0.8	4051PHCT-ND	2.18	17.81	4051PHTB-ND	369.19	651.97	608.22/M	MAL202137221E3
	330	83	0.110	430	25	10	0.8	4052PHCT-ND	2.76	22.63	4052PHTB-ND	469.06	828.15	773.17/M	MAL202137331E3
63	470	117	0.110	520	25	10	0.8	4053PHCT-ND	2.76	22.63	4053PHTB-ND	469.06	828.15	773.17/M	MAL202190515E3
	470	117	0.120	590	30	10	0.8	4054PHBK-ND	2.11	17.07	—	496.44	868.78	837.76/M	MAL202117471E3
	680	167	0.120	800	30	12.5	0.8	4055PHBK-ND	2.36	19.04	—	553.90	969.32	934.71/M	MAL202117681E3
	1500	364	0.150	1120	30	15	0.8	4057PHBK-ND	3.32	26.85	—	781.02	1367.79	1317.98/M	MAL202117523E3
	2200	532	0.170	1390	30	18	0.8	4058PHBK-ND	3.77	30.44	—	882.72	1643.68	1582.81/M	MAL202117222E3
	3300	796	0.190	1810	38	18	0.8	4059PHBK-ND	4.95	39.95	—	1158.52	2157.24	2077.35/M	MAL202117332E3
	4700	1132	0.210	1940	38	21	0.8	4060PHBK-ND	5.20	46.76	—	1454.77	2701.71	2649.76/M	MAL202117472E3
	0.47	4.2	0.090	8.0	10	4.5	0.6	4061PHCT-ND	1.20	10.08	4061PHTB-ND	—	332.16	—	MAL202138477E3
	1.0	4.4	0.090	12	10	4.5	0.6	4062PHCT-ND	1.20	10.08	4062PHTB-ND	—	332.16	—	MAL202138108E3
	2.2	4.8	0.090	21	10	4.5	0.6	4063PHCT-ND	1.20	10.08	4063PHTB-ND	—	332.16	—	MAL202138228E3
3.3	5.2	0.090	25	10	4.5	0.6	4064PHCT-ND	1.20	10.08	4064PHTB-ND	—	332.16	—	MAL202138338E3	
4.7	5.8	0.090	31	10	4.5	0.6	4065PHCT-ND	1.20	10.08	4065PHTB-ND	—	332.16	—	MAL202138478E3	
100	10	7.8	0.080	50	10	4.5	0.6	4066PHCT-ND	1.20	10.08	4066PHTB-ND	—	332.16	—	MAL202138109E3
	15	9.5	0.080	55	10	4.5	0.6	4067PHCT-ND	1.32	11.08	4067PHTB-ND	—	365.82	—	MAL202138159E3
	22	12	0.080	90	10	6.0	0.6	4068PHCT-ND	1.32	11.08	4068PHTB-ND	—	365.82	—	MAL202138229E3
	33	16	0.080	100	10	6.0	0.6	4069PHCT-ND	1.47	12.23	4069PHTB-ND	—	403.98	—	MAL202138339E3
	47	22	0.080	140	11	8.0	0.6	4070PHCT-ND	1.65	13.52	4070PHTB-ND	280.54	494.87	462.33/M	MAL202190542E3
	47	22	0.080	150	18	6.5	0.8	4071PHCT-ND	1.65	13.52	4071PHTB-ND	—	494.87	—	MAL202138479E3
	68	30	0.080	170	18	6.5	0.8	4073PHCT-ND	1.65	13.52	4073PHTB-ND	—	494.87	—	MAL202138689E3
	100	42	0.080	250	18	8.0	0.8	4074PHCT-ND	1.90	15.55	4074PHTB-ND	322.62	568.94	530.78/M	MAL202138101E3</