

ALUMINUM ELECTROLYTIC CAPACITORS

PZ1 Series and ZL1 Series — Longer Life



- **PZ1 Series** - Life rating to 3,000 hours at 85°C.
- Similar to HP3 Series in size and ripple current, with improved electrolyte and foil for longer life.
- This series offers R: 2-Claw Terminals as standard.
S: 4-Claw Terminals and T: T Terminals are also available.
Place the appropriate designation in the Part Number. (R is shown.)
- **ZL1 Series** - Life rating to 3,000 hours at 105°C.
- Similar to HU4 Series in size and ripple current, with improved electrolyte and foil for longer life.
- This series offers R: 2-Claw Terminals as standard.
U: Straight Short Terminals are also available.
Place the appropriate designation in the Part Number. (R is shown.)

For outline drawings, dimensions and other terminal shapes available see catalog page 53.

PZ1 Series

Ripple Current Correction Coefficient

Temperature (°C)	40	55	70	85
Correction Coefficient	1.8	1.4	1.2	1.0

Frequency (Hz)	50/60	120	400	1K	≥10K
Correction Coefficient	0.8	1.0	1.1	1.3	1.4

ZL1 Series

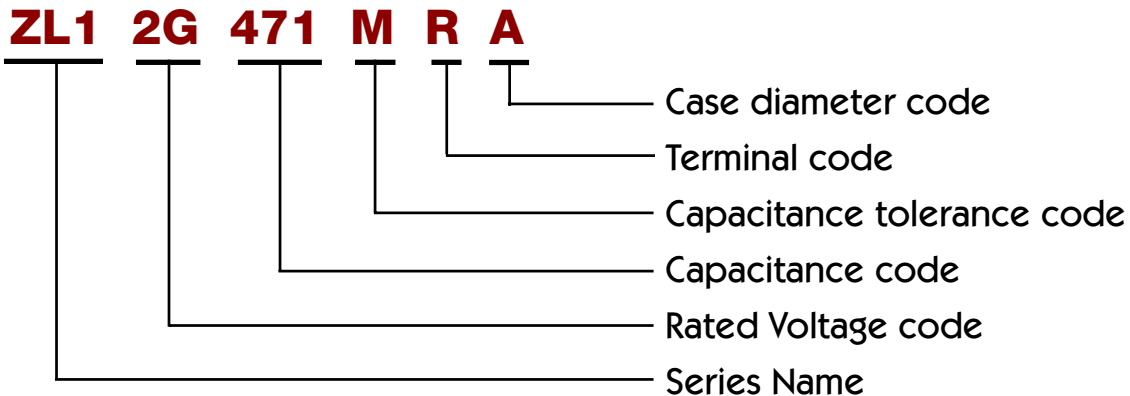
Ripple Current Correction Coefficient

Temperature (°C)	40	55	70	85	105
Correction Coefficient	2.5	2.2	2.0	1.8	1.0

Frequency (Hz)	50/60	120	400	1K	≥10K
Correction Coefficient	0.7	1.0	1.1	1.3	1.4

Product Numbering System for PZ1 and ZL1 Series

Example: ZL1 Series, 400V, 470µF, ±20%, 2-claw terminal, 35mm diameter case



Capacitance Code: To determine Capacitance code use the first 2 digits of the Capacitance followed by the number of zeros. Using the above example of 470: 47 + 1 zeros = 471.

ALUMINUM ELECTROLYTIC CAPACITORS

ZL1 Series



- Life rating to 3,000 hours at 105°C
- Temperature range -40°C to +105°C

For outline drawings, dimensions and other terminal shapes available see page 53.

Rated Voltage (WVDC)	Part Number	Capacitance	Case Size ØD x L (mm)	Maximum Ripple Current (A rms) @105° C, 120Hz	Typical ESR (mΩ) @20° C, 120Hz	Typical ESL (nH)
200 Volts (Code: 2D)	ZL12D391MRX	390	22 X 30	1.24	275	7
	ZL12D471MRX	470	22 X 35	1.45	230	9
	ZL12D471MRY	470	25 X 30	1.40	230	9
	ZL12D561MRX	560	22 X 40	1.66	190	9
	ZL12D561MRY	560	25 X 35	1.61	190	9
	ZL12D561MRZ	560	30 X 25	1.45	190	9
	ZL12D681MRX	680	22 X 45	1.92	160	11
	ZL12D681MRY	680	25 X 40	1.86	160	11
	ZL12D821MRY	820	25 X 45	2.14	130	11
	ZL12D821MRZ	820	30 X 30	1.86	130	11
	ZL12D821MRA	820	35 X 25	1.52	130	11
	ZL12D102MRY	1,000	25 X 50	2.47	110	13
	ZL12D102MRZ	1,000	30 X 35	2.17	110	13
	ZL12D102MRA	1,000	35 X 30	1.78	110	13
	ZL12D122MRZ	1,200	30 X 40	2.49	90	14
	ZL12D122MRA	1,200	35 X 35	2.04	90	14
	ZL12D152MRZ	1,500	30 X 50	3.03	75	14
	ZL12D152MRA	1,500	35 X 40	2.39	75	14
ZL12D182MRA	1,800	35 X 45	2.73	60	15	
ZL12D222MRA	2,200	35 X 50	3.14	50	15	
250 Volts (Code: 2E)	ZL12E181MRX	180	22 X 25	0.86	540	5
	ZL12E221MRX	220	22 X 25	0.95	445	5
	ZL12E271MRX	270	22 X 30	1.12	360	6
	ZL12E331MRX	330	22 X 35	1.31	295	7
	ZL12E391MRX	390	22 X 40	1.50	250	8
	ZL12E391MRY	390	25 X 30	1.37	250	8
	ZL12E471MRX	470	22 X 45	1.72	210	8
	ZL12E471MRY	470	25 X 35	1.59	210	8
	ZL12E561MRX	560	22 X 50	1.96	175	9
	ZL12E561MRY	560	25 X 40	1.83	175	9
	ZL12E561MRZ	560	30 X 30	1.65	175	9
	ZL12E681MRY	680	25 X 45	2.11	145	9
	ZL12E681MRZ	680	30 X 35	1.91	145	9
	ZL12E821MRZ	820	30 X 40	2.20	120	10
	ZL12E821MRA	820	35 X 30	1.76	120	10
	ZL12E102MRZ	1,000	30 X 45	2.54	100	11
	ZL12E102MRA	1,000	35 X 35	2.04	100	11
	ZL12E122MRZ	1,200	30 X 50	2.90	85	11
ZL12E122MRA	1,200	35 X 40	2.34	85	11	
ZL12E152MRA	1,500	35 X 50	2.84	65	12	

ALUMINUM ELECTROLYTIC CAPACITORS

ZL1 Series

•Life rating to 3,000 hours at 105°C

•Temperature range -40°C to +105°C

Rated Voltage (WVDC)	Part Number	Capacitance	Case Size ØD x L (mm)	Maximum Ripple Current (A rms) @105° C, 120Hz	Typical ESR (mΩ) @20° C, 120Hz	Typical ESL (nH)
400 Volts (Code: 2G)	ZL12G820MRX	82	22 X 25	0.58	1080	3
	ZL12G101MRX	100	22 X 30	0.68	890	3
	ZL12G121MRX	120	22 X 35	0.79	740	3
	ZL12G151MRX	150	22 X 40	0.93	590	4
	ZL12G151MRY	150	25 X 30	0.85	590	4
	ZL12G151MRZ	150	30 X 25	0.80	590	4
	ZL12G181MRX	180	22 X 45	1.07	490	4
	ZL12G181MRY	180	25 X 35	0.98	490	4
	ZL12G221MRX	220	22 X 50	1.23	400	5
	ZL12G221MRY	220	25 X 40	1.14	400	5
	ZL12G221MRZ	220	30 X 30	1.03	400	5
	ZL12G221MRA	220	35 X 25	0.96	400	5
	ZL12G271MRY	270	25 X 45	1.33	330	5
	ZL12G271MRZ	270	30 X 35	1.20	330	5
	ZL12G271MRA	270	35 X 30	1.13	330	5
	ZL12G331MRZ	330	30 X 40	1.40	270	6
	ZL12G391MRZ	390	30 X 45	1.59	230	6
	ZL12G391MRA	390	35 X 35	1.43	230	6
	ZL12G471MRZ	470	30 X 50	1.81	190	7
	ZL12G471MRA	470	35 X 40	1.64	190	7
ZL12G561MRA	560	35 X 45	1.87	160	8	
450 Volts (Code: 2W)	ZL12W560MRX	56	22 X 25	0.48	1580	3
	ZL12W820MRX	82	22 X 30	0.62	1080	3
	ZL12W820MRY	82	25 X 25	0.55	1080	3
	ZL12W101MRX	100	22 X 35	0.72	890	3
	ZL12W101MRY	100	25 X 30	0.64	890	3
	ZL12W121MRX	120	22 X 40	0.83	740	4
	ZL12W121MRY	120	25 X 35	0.74	740	4
	ZL12W121MRZ	120	30 X 25	0.72	740	4
	ZL12W151MRX	150	22 X 50	1.02	590	5
	ZL12W151MRY	150	25 X 40	0.88	590	5
	ZL12W151MRZ	150	30 X 30	0.85	590	5
	ZL12W151MRA	150	35 X 25	0.80	590	5
	ZL12W181MRY	180	25 X 45	1.00	490	5
	ZL12W221MRY	220	25 X 50	1.16	400	5
	ZL12W221MRZ	220	30 X 35	1.09	400	5
	ZL12W221MRA	220	35 X 30	1.02	400	5
	ZL12W271MRZ	270	30 X 45	1.32	330	10
	ZL12W271MRA	270	35 X 35	1.19	330	10
	ZL12W331MRZ	330	30 X 50	1.52	270	10
	ZL12W331MRA	330	35 X 40	1.37	270	10
ZL12W391MRA	390	35 X 45	1.56	230	12	
ZL12W471MRA	470	35 X 50	1.78	190	24	