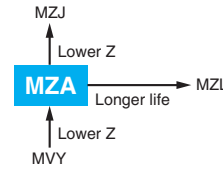


Alchip™-MZA Series

- Endurance : 2,000 to 5,000 hours at 105°C
- Low impedance
- Solvent resistant type(see PRECAUTIONS AND GUIDELINES)
- Vibration resistant structure
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.

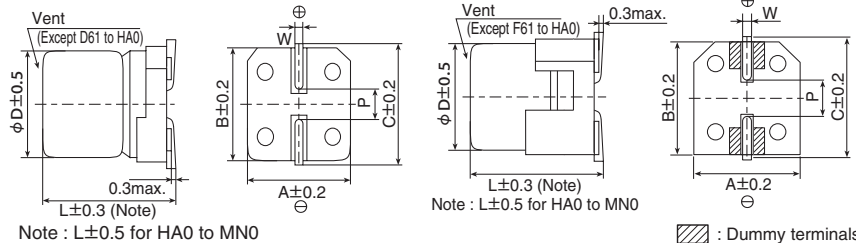


◆SPECIFICATIONS

Items	Characteristics										
Category	-55 to +105°C										
Temperature Range	-55 to +105°C										
Rated Voltage Range	6.3 to 100V _{dc}										
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)										
Leakage Current	I=0.01CV or 3μA, whichever is greater Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)										
Dissipation Factor (tan δ)	Rated voltage(V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	
	tan δ(Max.)	D61 to JA0	0.26	0.19	0.16	0.14	0.12	0.10	0.08	0.08	—
		KE0 to MN0	—	—	—	0.16	0.14	0.12	0.12	0.10	0.10
When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)											
Low Temperature Characteristics (Max. impedance Ratio)	Rated voltage(V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	
	Z(-25°C)/Z(+20°C)	2	2	2	2	2	2	2	2	2	
	Z(-40°C)/Z(+20°C)	3	3	3	3	3	3	3	3	3	
	Z(-55°C)/Z(+20°C)	4	4	4	3	3	3	3	3	3	
(at 120Hz)											
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for specified time at 105°C.										
	Time	D61 to JA0 : 2,000 hours KE0 to MN0 : 5,000 hours									
	Capacitance change	≤ ±30% of the initial value									
	D.F. (tan δ)	≤200% of the initial specified value									
	Leakage current	≤The initial specified value									

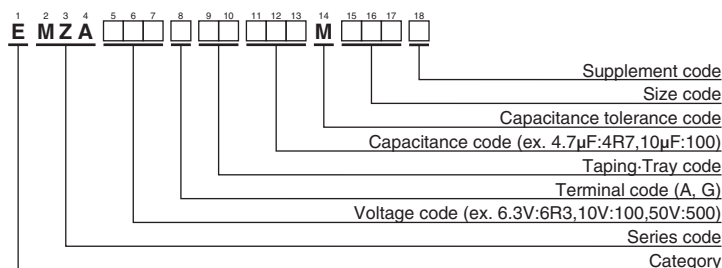
◆DIMENSIONS [mm]

- Terminal Code : A
- Size code : D61 to MN0
- Terminal Code : G(Vibration resistant structure)
- Size code : F61 to MN0



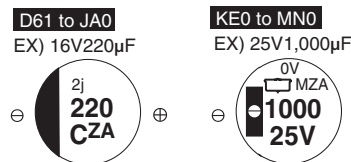
Size code	D	L	A	B	C	W	P
D61	4	5.8	4.3	4.3	5.1	0.5 to 0.8	1.0
E61	5	5.8	5.3	5.3	5.9	0.5 to 0.8	1.4
F61	6.3	5.8	6.6	6.6	7.2	0.5 to 0.8	1.9
F80	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
HA0	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
JA0	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5
KE0	12.5	13.5	13.0	13.0	13.7	1.0 to 1.3	4.2
KG5	12.5	16.0	13.0	13.0	13.7	1.0 to 1.3	4.2
LH0	16	16.5	17.0	17.0	18.0	1.0 to 1.3	6.5
LN0	16	21.5	17.0	17.0	18.0	1.0 to 1.3	6.5
MH0	18	16.5	19.0	19.0	20.0	1.0 to 1.3	6.5
MN0	18	21.5	19.0	19.0	20.0	1.0 to 1.3	6.5

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (surface mount type)"

◆MARKING



- Rated voltage symbol (D61 to JA0)

Rated voltage (V _{dc})	6.3	10	16	25	35	50	63	80
Symbol	j	A	C	E	V	H	J	K



Alchip™ - **MZA** Series

◆ **STANDARD RATINGS**

WV (Vdc)	Cap (µF)	Size code	Impedance (Ω max./100kHz)		Rated ripple current (mArms/105°C, 100kHz)	Part No.	WV (Vdc)	Cap (µF)	Size code	Impedance (Ω max./100kHz)		Rated ripple current (mArms/105°C, 100kHz)	Part No.
			20°C	-40°C						20°C	-40°C		
6.3	22	D61	1.35	-	90	EMZA6R3ARA220MD61G	35	330	JA0	0.08	-	850	EMZA350 □ RA331MJA0G
	47	D61	1.35	-	90	EMZA6R3ARA470MD61G		620	KE0	0.060	0.30	1,320	EMZA350 □ RA621MKE0S
	47	E61	0.70	-	160	EMZA6R3ARA470ME61G		820	KG5	0.056	0.28	1,470	EMZA350 □ RA821MKG5S
	100	E61	0.70	-	160	EMZA6R3ARA101ME61G		1,200	LH0	0.047	0.24	1,820	EMZA350 □ RA122MLH0S
	100	F61	0.36	-	240	EMZA6R3 □ RA101MF61G		1,600	MH0	0.045	0.23	2,060	EMZA350 □ RA162MMH0S
	220	F61	0.36	-	240	EMZA6R3 □ RA221MF61G		1,800	LNO	0.034	0.17	2,400	EMZA350 □ RA182MLN0S
	330	F80	0.34	-	280	EMZA6R3 □ RA331MF80G		2,400	MNO	0.032	0.16	2,640	EMZA350 □ RA242MMN0S
	470	HA0	0.16	-	600	EMZA6R3 □ RA471MHA0G		4.7	D61	2.9	-	60	EMZA500ARA4R7MD61G
	1,000	HA0	0.16	-	600	EMZA6R3 □ RA102MHA0G		10	E61	1.52	-	85	EMZA500ARA100ME61G
	1,500	JA0	0.08	-	850	EMZA6R3 □ RA152MJA0G		10	F61	0.88	-	165	EMZA500 □ RA100MF61G
10	22	D61	1.35	-	90	EMZA100ARA220MD61G	22	F61	0.88	-	165	EMZA500 □ RA220MF61G	
	33	D61	1.35	-	90	EMZA100ARA330MD61G	33	F80	0.68	-	195	EMZA500 □ RA330MF80G	
	33	E61	0.70	-	160	EMZA100ARA330ME61G	47	F80	0.68	-	195	EMZA500 □ RA470MF80G	
	220	F80	0.34	-	280	EMZA100 □ RA221MF80G	100	HA0	0.34	-	350	EMZA500 □ RA621MLH0S	
	330	HA0	0.16	-	600	EMZA100 □ RA331MHA0G	220	JA0	0.18	-	670	EMZA500 □ RA221MJA0G	
	470	HA0	0.16	-	600	EMZA100 □ RA471MHA0G	330	KE0	0.11	0.55	980	EMZA500 □ RA331MKE0S	
	680	HA0	0.16	-	600	EMZA100 □ RA681MHA0G	430	KG5	0.10	0.50	1,090	EMZA500 □ RA431MKG5S	
	1,000	JA0	0.08	-	850	EMZA100 □ RA102MJA0G	620	LH0	0.087	0.44	1,320	EMZA500 □ RA621MLH0S	
	10	D61	1.35	-	90	EMZA160ARA100MD61G	820	MH0	0.087	0.44	1,420	EMZA500 □ RA821MMH0S	
	22	D61	1.35	-	90	EMZA160ARA220MD61G	1,000	LNO	0.050	0.25	1,910	EMZA500 □ RA102MLN0S	
16	22	E61	0.70	-	160	EMZA160ARA220ME61G	1,300	MNO	0.050	0.25	2,180	EMZA500 □ RA132MMN0S	
	47	E61	0.70	-	160	EMZA160ARA470ME61G	4.7	E61	4.8	-	50	EMZA630ARA4R7ME61G	
	47	F61	0.36	-	240	EMZA160 □ RA470MF61G	10	F61	2.2	-	80	EMZA630 □ RA100MF61G	
	100	F61	0.36	-	240	EMZA160 □ RA101MF61G	22	F80	2.1	-	120	EMZA630 □ RA220MF80G	
	220	F80	0.34	-	280	EMZA160 □ RA221MF80G	33	HA0	0.70	-	250	EMZA630 □ RA330MHA0G	
	330	HA0	0.16	-	600	EMZA160 □ RA331MHA0G	47	HA0	0.70	-	250	EMZA630 □ RA470MHA0G	
	470	HA0	0.16	-	600	EMZA160 □ RA471MHA0G	68	HA0	0.70	-	250	EMZA630 □ RA680MHA0G	
	680	JA0	0.08	-	850	EMZA160 □ RA681MJA0G	100	JA0	0.45	-	400	EMZA630 □ RA101MJA0G	
	10	D61	1.35	-	90	EMZA250ARA100MD61G	240	KE0	0.19	1.54	880	EMZA630 □ RA241MKE0S	
	22	E61	0.70	-	160	EMZA250ARA220ME61G	300	KG5	0.17	1.19	1,000	EMZA630 □ RA301MKG5S	
25	33	E61	0.70	-	160	EMZA250ARA330ME61G	430	LH0	0.15	1.05	1,220	EMZA630 □ RA431MLH0S	
	33	F61	0.36	-	240	EMZA250 □ RA330MF61G	560	MH0	0.12	0.84	1,430	EMZA630 □ RA561MMH0S	
	47	F61	0.36	-	240	EMZA250 □ RA470MF61G	680	LNO	0.085	0.58	1,790	EMZA630 □ RA681MLN0S	
	100	F80	0.34	-	280	EMZA250 □ RA101MF80G	910	MNO	0.070	0.49	1,960	EMZA630 □ RA911MMN0S	
	220	HA0	0.16	-	600	EMZA250 □ RA221MHA0G	3.3	E61	5.0	-	25	EMZA800ARA3R3ME61G	
	330	HA0	0.16	-	600	EMZA250 □ RA331MHA0G	4.7	F61	3.0	-	40	EMZA800 □ RA4R7MF61G	
	470	JA0	0.08	-	850	EMZA250 □ RA471MJA0G	10	F80	2.4	-	60	EMZA800 □ RA100MF80G	
	1,000	KE0	0.060	0.30	1,320	EMZA250 □ RA102MKE0S	22	HA0	1.3	-	130	EMZA800 □ RA220MHA0G	
	1,300	KG5	0.056	0.28	1,470	EMZA250 □ RA132MKG5S	33	HA0	1.3	-	130	EMZA800 □ RA330MHA0G	
	1,800	LH0	0.047	0.24	1,820	EMZA250 □ RA182MLH0S	47	JA0	0.70	-	200	EMZA800 □ RA470MJA0G	
35	2,400	MH0	0.045	0.23	2,060	EMZA250 □ RA242MMH0S	150	KE0	0.22	1.54	810	EMZA800 □ RA151MKE0S	
	3,000	LNO	0.034	0.17	2,400	EMZA250 □ RA302MLN0S	220	KG5	0.17	1.19	1,000	EMZA800 □ RA221MKG5S	
	3,900	MNO	0.032	0.16	2,640	EMZA250 □ RA392MMN0S	330	LH0	0.15	1.05	1,220	EMZA800 □ RA331MLH0S	
	4.7	D61	1.35	-	90	EMZA350ARA4R7MD61G	430	MH0	0.12	0.84	1,430	EMZA800 □ RA431MMH0S	
	10	D61	1.35	-	90	EMZA350ARA100MD61G	470	LNO	0.085	0.58	1,790	EMZA800 □ RA471MLN0S	
	10	E61	0.70	-	160	EMZA350ARA100ME61G	680	MNO	0.070	0.49	1,960	EMZA800 □ RA681MMN0S	
	22	E61	0.70	-	160	EMZA350ARA220ME61G	110	KE0	0.28	2.24	740	EMZA101 □ RA111MKE0S	
	33	F61	0.36	-	240	EMZA350 □ RA330MF61G	130	KG5	0.21	1.68	900	EMZA101 □ RA131MKG5S	
	47	F61	0.36	-	240	EMZA350 □ RA470MF61G	200	LH0	0.18	1.44	1,090	EMZA101 □ RA201MLH0S	
	100	F80	0.34	-	280	EMZA350 □ RA101MF80G	270	MH0	0.15	1.2	1,280	EMZA101 □ RA271MMH0S	
100	HA0	0.16	-	600	EMZA350 □ RA101MHA0G	330	LNO	0.11	0.88	1,580	EMZA101 □ RA331MLN0S		
220	HA0	0.16	-	600	EMZA350 □ RA221MHA0G	430	MNO	0.091	0.73	1,690	EMZA101 □ RA431MMN0S		

□ : Enter the appropriate terminal code.

Production of the products shown in is scheduled to be discontinued.

◆ **RATED RIPPLE CURRENT MULTIPLIERS**

● Frequency Multipliers

Size code	Capacitance(µF)	Frequency(Hz)			
		120	1k	10k	100k
D61 to JA0	3.3 to 4.7	0.35	0.70	0.90	1.00
	10 to 100	0.40	0.75	0.90	1.00
	220 to 470	0.50	0.85	0.94	1.00
	680 to 1,500	0.60	0.87	0.95	1.00
KE0 to MNO	110 to 200	0.40	0.75	0.90	1.00
	220 to 620	0.50	0.85	0.94	1.00
	680 to 1,800	0.60	0.87	0.95	1.00
	2,400 to 3,000	0.75	0.90	0.95	1.00
	3,900	0.85	0.95	0.98	1.00

The deterioration of aluminum electrolytic capacitors accelerates their life due to the internal heating produced by ripple current. For details, refer to Section "5-3 Ripple Current Effect on Lifetime" in the catalog, Technical Note.

Product specifications in this catalog are subject to change without notice. Request our product specifications before purchase and/or use. Please use our products based on the information contained in this catalog and product specifications.



- Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.
- Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.
- The products listed in this catalog are designed and manufactured for general electronics equipment use and are not intended for use in applications that can adversely affect human life; where the malfunction of equipment may cause damage to life or property. In addition, our products are not intended to be used in specific applications that may cause a major social impact. Please consult with us in advance of usage of our products in the following listed applications. ① Aerospace equipment ② Power generation equipment such as thermal power, nuclear power etc. ③ Medical equipment ④ Transport equipment (automobiles, trains, ships, etc.) ⑤ Transportation control equipment ⑥ Disaster prevention / crime prevention equipment ⑦ Highly publicized information processing equipment ⑧ Submarine equipment ⑨ Other applications that are not considered general-purpose applications.
- The circuits described as examples in this catalog and the "delivery specifications" are featured in order to show the operations and usage of our products, however, this fact does not guarantee that the circuits are available to function in your equipment systems. We are not in any case responsible for any failures or damage caused by the use of information contained herein. You should examine our products, of which the characteristics are described in the "delivery specifications" and other documents, and determine whether or not our products suit your requirements according to the specifications of your equipment systems. Therefore, you bear final responsibility regarding the use of our products.
Please make sure that you take appropriate safety measures such as use of redundant design and malfunction prevention measures in order to prevent fatal accidents and/or fires in the event any of our products malfunction.
- We strongly recommend our customers to purchase Nippon Chemi-Con products only through our official sales channels. We assume no responsibility for any defects or damages caused by using products purchased from outside our official sales channel or of counterfeit goods. In addition, we will ask the customer to pay the investigation cost for products purchased outside our official sales channel.
- We reserve the right to discontinue production and delivery of products. We do not guarantee that all the products included in this catalog will be available in the future.
The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products
- We continually strive to improve the quality and reliability of our products, but in any case that our product does not meet our published specifications, please stop using it promptly and contact us immediately. As for compensation for non-conforming goods delivered by Chemi-Con, we will limit it only to goods found in non-compliance of our published specifications. This may be accomplished by a no cost replacement of non-conforming individual products, a credit of the piece price paid per each individual non-conforming product, or in other ways deemed necessary.
In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.

[Part Numbering System](#)

[Part Numbering System \(Appendix\)](#)

[Standardization](#)

[Available Items by Manufacturing Locations](#)

[Environmental Measures](#)

[Technical Note](#)

[Precautions and Guidelines](#)

[Recommended Soldering Conditions](#)

[Taping, Lead-preforming and Packaging](#)

[Available Terminals for Snap-in and Screw Mount Type](#)

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View EMZA250ADA470MF61G on WIN SOURCE](#)
- ⊖ [United Chemi-Con Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management