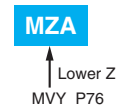


Alchip™ **MZA** Series *Upgrade!*

- Endurance : 2,000 to 5,000 hours at 105°C
- Low impedance
- Solvent resistant type(see PRECAUTIONS AND GUIDELINES)
- Vibration resistant structure
- RoHS Compliant

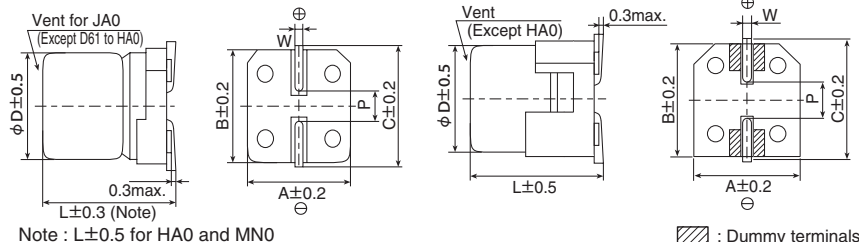


◆ **SPECIFICATIONS**

Items	Characteristics										
Category	-55 to +105°C										
Temperature Range											
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 (tanδ)	Rated voltage(V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	
	tanδ(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. (tanδ)	≤ 200% of the initial specified value									
	Leakage current	≤ The initial specified value									

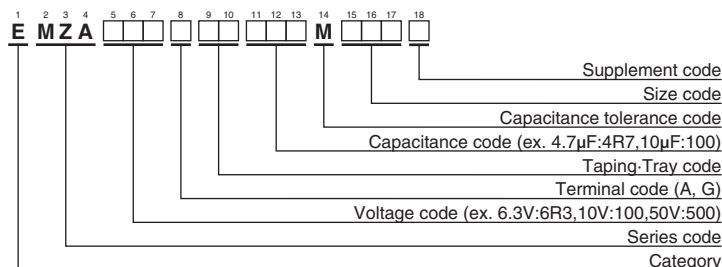
◆ **DIMENSIONS [mm]**

- Terminal Code : A
- Size code : D61 to MN0
- Terminal Code : G(Vibration resistant structure)
- Size code : HA0 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

◆ **STANDARD RATINGS**

WV (Vdc)	Cap (μF)	Size code	Impedance (Ω max/100kHz)		Rated ripple current (mA rms/105°C, 100kHz)	Part No.	WV (Vdc)	Cap (μF)	Size code	Impedance (Ω max/100kHz)		Rated ripple current (mA rms/105°C, 100kHz)	Part No.	
			20°C	-40°C						20°C	-40°C			
6.3	22	D61	1.35	—	90	EMZA6R3ADA220MD61G	35	330	JA0	0.08	—	850	EMZA350ADA331MJA0G	
	47	D61	1.35	—	90	EMZA6R3ADA470MD61G		620	KE0	0.060	0.30	1,320	EMZA350ARA621MKE0S	
	47	E61	0.70	—	160	EMZA6R3ADA470ME61G		820	KG5	0.056	0.28	1,470	EMZA350ARA821MKG5S	
	100	E61	0.70	—	160	EMZA6R3ADA101ME61G		1,200	LH0	0.047	0.24	1,820	EMZA350 □ DA122MLH0S	
	100	F61	0.36	—	240	EMZA6R3ADA101MF61G		1,600	MH0	0.045	0.23	2,060	EMZA350 □ DA162MMH0S	
	220	F61	0.36	—	240	EMZA6R3ADA221MF61G		1,800	LN0	0.034	0.17	2,400	EMZA350 □ DA182MLN0S	
	330	F80	0.34	—	280	EMZA6R3ADA331MF80G		2,400	MN0	0.032	0.16	2,640	EMZA350 □ DA242MMN0S	
	470	HA0	0.16	—	600	EMZA6R3ADA471MHA0G		50	4.7	D61	2.9	—	60	EMZA500ADA4R7MD61G
	1,000	HA0	0.16	—	600	EMZA6R3ADA102MHA0G			10	E61	1.52	—	85	EMZA500ADA100ME61G
	1,500	JA0	0.08	—	850	EMZA6R3ADA152MJA0G			10	F61	0.88	—	165	EMZA500ADA100MF61G
10	22	D61	1.35	—	90	EMZA100ADA220MD61G	22	F61	0.88	—	165	EMZA500ADA220MF61G		
	33	D61	1.35	—	90	EMZA100ADA330MD61G	33	F80	0.68	—	195	EMZA500ADA330MF80G		
	33	E61	0.70	—	160	EMZA100ADA330ME61G	47	F80	0.68	—	195	EMZA500ADA470MF80G		
	220	F80	0.34	—	280	EMZA100ADA221MF80G	100	HA0	0.34	—	350	EMZA500ADA101MHA0G		
	330	HA0	0.16	—	600	EMZA100ADA331MHA0G	220	JA0	0.18	—	670	EMZA500ADA221MJA0G		
	470	HA0	0.16	—	600	EMZA100ADA471MHA0G	330	KE0	0.11	0.55	980	EMZA500ARA331MKE0S		
	680	HA0	0.16	—	600	EMZA100ADA681MHA0G	430	KG5	0.10	0.50	1,090	EMZA500ARA431MKG5S		
	1,000	JA0	0.08	—	850	EMZA100ADA102MJA0G	620	LH0	0.087	0.44	1,320	EMZA500 □ DA621MLH0S		
	16	10	D61	1.35	—	90	EMZA160ADA100MD61G	820	MH0	0.087	0.44	1,420	EMZA500 □ DA821MMH0S	
		22	D61	1.35	—	90	EMZA160ADA220MD61G	1,000	LN0	0.050	0.25	1,910	EMZA500 □ DA102MLN0S	
22		E61	0.70	—	160	EMZA160ADA220ME61G	1,300	MN0	0.050	0.25	2,180	EMZA500 □ DA132MMN0S		
47		E61	0.70	—	160	EMZA160ADA470ME61G	63	4.7	E61	4.8	—	50	EMZA630ADA4R7ME61G	
47		F61	0.36	—	240	EMZA160ADA470MF61G		10	F61	2.2	—	80	EMZA630ADA100MF61G	
100		F61	0.36	—	240	EMZA160ADA101MF61G		22	F80	2.1	—	120	EMZA630ADA220MF80G	
220		F80	0.34	—	280	EMZA160ADA221MF80G		33	HA0	0.70	—	250	EMZA630ADA330MHA0G	
330		HA0	0.16	—	600	EMZA160ADA331MHA0G		47	HA0	0.70	—	250	EMZA630ADA470MHA0G	
470		HA0	0.16	—	600	EMZA160ADA471MHA0G		68	HA0	0.70	—	250	EMZA630ADA680MHA0G	
680		JA0	0.08	—	850	EMZA160ADA681MJA0G		100	JA0	0.45	—	400	EMZA630ADA101MJA0G	
25	10	D61	1.35	—	90	EMZA250ADA100MD61G		240	KE0	0.19	1.54	880	EMZA630ARA241MKE0S	
	22	E61	0.70	—	160	EMZA250ADA220ME61G		300	KG5	0.17	1.19	1,000	EMZA630ARA301MKG5S	
	33	E61	0.70	—	160	EMZA250ADA330ME61G		430	LH0	0.15	1.05	1,220	EMZA630 □ DA431MLH0S	
	33	F61	0.36	—	240	EMZA250ADA330MF61G	560	MH0	0.12	0.84	1,430	EMZA630 □ DA561MMH0S		
	47	F61	0.36	—	240	EMZA250ADA470MF61G	680	LN0	0.085	0.58	1,790	EMZA630 □ DA681MLN0S		
	100	F80	0.34	—	280	EMZA250ADA101MF80G	910	MN0	0.070	0.49	1,960	EMZA630 □ DA911MMN0S		
	220	HA0	0.16	—	600	EMZA250ADA221MHA0G	80	3.3	E61	5.0	—	25	EMZA800ADA3R3ME61G	
	330	HA0	0.16	—	600	EMZA250ADA331MHA0G		4.7	F61	3.0	—	40	EMZA800ADA4R7MF61G	
	470	JA0	0.08	—	850	EMZA250ADA471MJA0G		10	F80	2.4	—	60	EMZA800ADA100MF80G	
	1,000	KE0	0.060	0.30	1,320	EMZA250ARA102MKE0S		22	HA0	1.3	—	130	EMZA800ADA220MHA0G	
1,300	KG5	0.056	0.28	1,470	EMZA250ARA132MKG5S	33		HA0	1.3	—	130	EMZA800ADA330MHA0G		
1,800	LH0	0.047	0.24	1,820	EMZA250 □ DA182MLH0S	47		JA0	0.70	—	200	EMZA800ADA470MJA0G		
2,400	MH0	0.045	0.23	2,060	EMZA250 □ DA242MMH0S	150		KE0	0.22	1.54	810	EMZA800ARA151MKE0S		
3,000	LN0	0.034	0.17	2,400	EMZA250 □ DA302MLN0S	220		KG5	0.17	1.19	1,000	EMZA800ARA221MKG5S		
3,900	MN0	0.032	0.16	2,640	EMZA250 □ DA392MMN0S	330		LH0	0.15	1.05	1,220	EMZA800 □ DA331MLH0S		
35	4.7	D61	1.35	—	90	EMZA350ADA4R7MD61G		430	MH0	0.12	0.84	1,430	EMZA800 □ DA431MMH0S	
	10	D61	1.35	—	90	EMZA350ADA100MD61G	470	LN0	0.085	0.58	1,790	EMZA800 □ DA471MLN0S		
	10	E61	0.70	—	160	EMZA350ADA100ME61G	680	MN0	0.070	0.49	1,960	EMZA800 □ DA681MMN0S		
	22	E61	0.70	—	160	EMZA350ADA220ME61G	100	110	KE0	0.28	2.24	740	EMZA101ARA111MKE0S	
	33	F61	0.36	—	240	EMZA350ADA330MF61G		130	KG5	0.21	1.68	900	EMZA101ARA131MKG5S	
	47	F61	0.36	—	240	EMZA350ADA470MF61G		200	LH0	0.18	1.44	1,090	EMZA101 □ DA201MLH0S	
	100	F80	0.34	—	280	EMZA350ADA101MF80G		270	MH0	0.15	1.2	1,280	EMZA101 □ DA271MMH0S	
	100	HA0	0.16	—	600	EMZA350ADA101MHA0G		330	LN0	0.11	0.88	1,580	EMZA101 □ DA331MLN0S	
	220	HA0	0.16	—	600	EMZA350ADA221MHA0G		430	MN0	0.091	0.73	1,690	EMZA101 □ DA431MMN0S	

□ : Enter the appropriate terminal code.

◆ **RATED RIPPLE CURRENT MULTIPLIERS**

● Frequency Multipliers

Size code	Frequency(Hz)				
	Capacitance(μF)	120	1k	10k	100k
D55 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
	110 to 200	0.40	0.75	0.90	1.00
KE0 to MN0	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 endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.