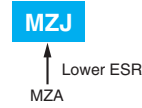


Alchip™-MZJ Series *Upgrade!*

- Lower ESR, 2,000 to 5,000 hours at 105°C
- Rated voltage range : 6.3 to 50V
- Nominal capacitance range : 22 to 10,000μF
- 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.



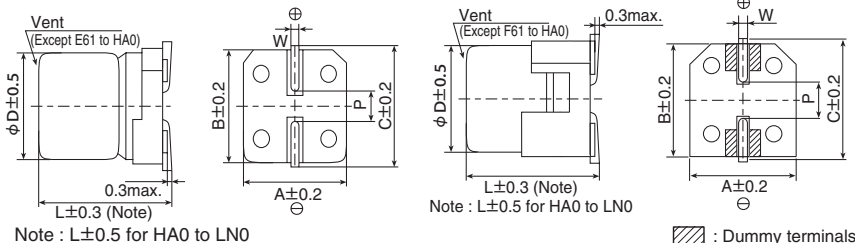
◆ SPECIFICATIONS

Items	Characteristics							
<b>Category</b>	-55 to +105°C							
<b>Temperature Range</b>								
<b>Rated Voltage Range</b>	6.3 to 50V <sub>dc</sub>							
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)							
<b>Leakage Current</b>	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)							
<b>Dissipation Factor (tan δ)</b>	Rated voltage (V <sub>dc</sub> )	6.3V	10V	16V	25V	35V	50V	(at 20°C, 120Hz)
	tan δ (Max.)	0.26	0.19	0.16	0.14	0.12	0.12	
When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.								
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Rated voltage (V <sub>dc</sub> )	6.3V	10V	16V	25V	35V	50V	(at 120Hz)
	Z(-25°C)/Z(+20°C)	2	2	2	2	2	2	
	Z(-40°C)/Z(+20°C)	3	3	3	3	3	3	
	Z(-55°C)/Z(+20°C)	4	4	4	3	3	3	
<b>Endurance</b>	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	E61 to JA0 : 2,000 hours						
		KE0 to LN0 : 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						
<b>Shelf Life</b>	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.							
	Capacitance change	≤ ±30% of the initial value						
	D.F. (tan δ)	≤200% of the initial specified value						
	Leakage current	≤The initial specified value						
<b>Surge Voltage Test</b>	The capacitors shall be subjected to 1,000 cycles each consisting of charging with the specified surge voltage for 30±5 seconds through a protective resistor (as required for RC=0.1±0.05sec) and open-circuiting for 5.5 minutes at a room temperature of 15 to 35°C.							
	Rated voltage (V <sub>dc</sub> )	6.3	10	16	25	35	50	
	Surge voltage (V <sub>dc</sub> )	7.2	12	18	29	40	58	
	Appearance	No significant damage						
	Capacitance change	≤ ±20% of the initial value						
	D.F. (tan δ)	≤200% of the initial specified value						
	Leakage current	≤The initial specified value						
	(Caution)	Surge Voltage Test intends to evaluate capacitors in durability of an exceptional excessive voltage under specific conditions. It does not imply long-term use at all.						

◆ DIMENSIONS [mm]

- Terminal Code : A
- Terminal Code : G (Vibration resistant structure)

- Size code : E61 to LN0
- Size code : F61 to LN0



Size code	φD	L	A	B	C	W	P
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

◆ MARKING

EX) 35V220μF

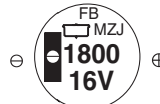


- Rated voltage symbol (E61 to JA0)

Rated voltage (V <sub>dc</sub> )	6.3	10	16	25	35
Symbol	j	A	C	E	V

KE0 to LN0

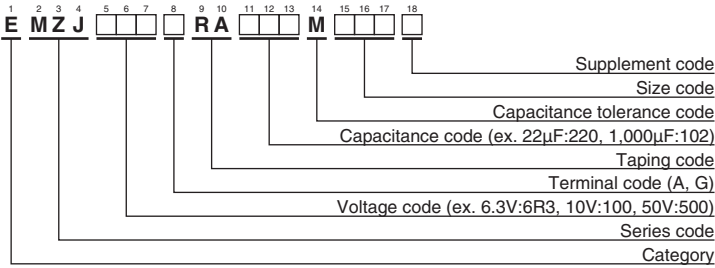
EX) 16V1,800μF



Applying voltage over the rated voltages causes the capacitors to have short lifetime. Besides, applying voltage over the specified surge voltages may cause to have short circuit failure. A protection circuit should be used if applied voltage will exceed the rated voltages.

Alchip™ - **MZJ** Series Upgrade!

◆ **PART NUMBERING SYSTEM**



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

◆ **STANDARD RATINGS**

WV (V <sub>dc</sub> )	Cap (μF)	Size code	ESR (Ω max./20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz)	Part No.	WV (V <sub>dc</sub> )	Cap (μF)	Size code	ESR (Ω max./20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz)	Part No.
6.3	100	E61	0.36	240	EMZJ6R3ARA101ME61G	25	33	E61	0.36	240	EMZJ250ARA330ME61G
	220	F61	0.26	300	EMZJ6R3□RA221MF61G		33	F61	0.26	300	EMZJ250□RA330MF61G
	330	F80	0.16	600	EMZJ6R3□RA331MF80G		47	F61	0.26	300	EMZJ250□RA470MF61G
	1,000	HA0	0.08	850	EMZJ6R3□RA102MHA0G		68	F61	0.26	300	EMZJ250□RA680MF61G
	1,500	JA0	0.06	1,190	EMZJ6R3□RA152MJA0G		100	F80	0.16	600	EMZJ250□RA101MF80G
	1,800	JA0	0.06	1,190	EMZJ6R3□RA182MJA0G		330	HA0	0.08	850	EMZJ250□RA331MHA0G
	3,300	KE0	0.051	1,210	EMZJ6R3□RA332MKE0S		470	JA0	0.06	1,190	EMZJ250□RA471MJA0G
	3,900	KG5	0.044	1,420	EMZJ6R3□RA392MKG5S		560	JA0	0.06	1,190	EMZJ250□RA561MJA0G
	6,800	LH0	0.035	1,850	EMZJ6R3□RA682MLH0S		1,200	KE0	0.051	1,210	EMZJ250□RA122MKE0S
	10,000	LN0	0.026	2,330	EMZJ6R3□RA103MLN0S		1,500	KG5	0.044	1,420	EMZJ250□RA152MKG5S
10	150	F61	0.26	300	EMZJ100□RA151MF61G	2,200	LH0	0.035	1,850	EMZJ250□RA222MLH0S	
	680	HA0	0.08	850	EMZJ100□RA681MHA0G	3,900	LN0	0.026	2,330	EMZJ250□RA392MLN0S	
	1,000	JA0	0.06	1,190	EMZJ100□RA102MJA0G	35	22	E61	0.36	240	EMZJ350ARA220ME61G
	1,200	JA0	0.06	1,190	EMZJ100□RA122MJA0G		33	F61	0.26	300	EMZJ350□RA330MF61G
	2,200	KE0	0.051	1,210	EMZJ100□RA222MKE0S		47	F61	0.26	300	EMZJ350□RA470MF61G
	2,700	KG5	0.044	1,420	EMZJ100□RA272MKG5S		68	F61	0.26	300	EMZJ350□RA680MF61G
	4,700	LH0	0.035	1,850	EMZJ100□RA472MLH0S		100	F80	0.16	600	EMZJ350□RA101MF80G
6,800	LN0	0.026	2,330	EMZJ100□RA682MLN0S	100		HA0	0.08	850	EMZJ350□RA101MHA0G	
16	47	E61	0.36	240	EMZJ160ARA470ME61G		150	HA0	0.08	850	EMZJ350□RA151MHA0G
	100	F61	0.26	300	EMZJ160□RA101MF61G	220	HA0	0.08	850	EMZJ350□RA221MHA0G	
	150	F80	0.16	600	EMZJ160□RA151MF80G	330	JA0	0.06	1,190	EMZJ350□RA331MJA0G	
	220	F80	0.16	600	EMZJ160□RA221MF80G	390	JA0	0.06	1,190	EMZJ350□RA391MJA0G	
	470	HA0	0.08	850	EMZJ160□RA471MHA0G	680	KE0	0.051	1,210	EMZJ350□RA681MKE0S	
	680	JA0	0.06	1,190	EMZJ160□RA681MJA0G	820	KG5	0.044	1,420	EMZJ350□RA821MKG5S	
	820	JA0	0.06	1,190	EMZJ160□RA821MJA0G	1,500	LH0	0.035	1,850	EMZJ350□RA152MLH0S	
	1,800	KE0	0.051	1,210	EMZJ160□RA182MKE0S	2,700	LN0	0.026	2,330	EMZJ350□RA272MLN0S	
	2,200	KG5	0.044	1,420	EMZJ160□RA222MKG5S	50	390	KE0	0.105	930	EMZJ500□RA391MKE0S
	3,900	LH0	0.035	1,850	EMZJ160□RA392MLH0S		470	KG5	0.092	1,120	EMZJ500□RA471MKG5S
5,600	LN0	0.026	2,330	EMZJ160□RA562MLN0S	1,000		LH0	0.073	1,660	EMZJ500□RA102MLH0S	
25	22	E61	0.36	240	EMZJ250ARA220ME61G	1,200	LN0	0.050	1,920	EMZJ500□RA122MLN0S	

□ : Enter the appropriate terminal code.

◆ **RATED RIPPLE CURRENT MULTIPLIERS**

● Frequency Multipliers

Size code	Capacitance(μF)	Frequency(Hz)			
		120	1k	10k	100k
E61 to JA0	22 to 150	0.40	0.75	0.90	1.00
	220 to 560	0.50	0.85	0.94	1.00
	680 to 1,800	0.60	0.87	0.95	1.00
KE0 to LN0	390 to 470	0.50	0.85	0.94	1.00
	680 to 1,800	0.60	0.87	0.95	1.00
	2,200 to 3,300	0.75	0.90	0.95	1.00
	3,900 to 10,000	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.