Alchip™-MZJ Series

- Lower ESR, 2,000 to 5,000 hours at 105℃
- Rated voltage range : 6.3 to 50Vdc, Nominal capacitance range : 22 to 10,000μF
- Solvent resistant type
- Vibration resistant structure
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.

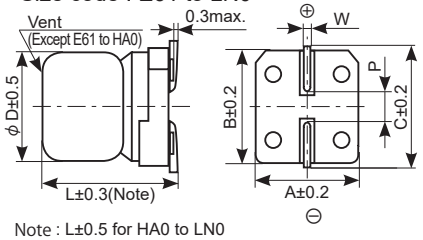
◆ SPECIFICATIONS

Items	Characteristics
Category Temperature Range	-55 to +105℃
Rated Voltage Range	6.3 to 50Vdc
Capacitance Tolerance	±20% (M) (at 20℃ , 120Hz)
Leakage Current	I=0.01CV or 3μA, which is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 2 minutes)
Dissipation Factor (tan δ)	Rated voltage (Vdc) 6.3V 10V 16V 25V 35V 50V 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. (at 20℃ , 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc) 6.3V 10V 16V 25V 35V 50V Z(-25℃)/Z(+20℃) 2 2 2 2 2 2 Z(-40℃)/Z(+20℃) 3 3 3 3 3 3 Z(-55℃)/Z(+20℃) 4 4 4 3 3 3 (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for specified time at 105℃ . Time: E61 to JA0 : 2,000hours; KE0 to LN0 : 5,000hours Capacitance change: ≦ ±30% of the initial value D.F. (tan δ): ≦ 200% of the initial specified value Leakage current: ≦ The initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ 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
Surge Voltage Test	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℃. Rated voltage (Vdc) 6.3V 10V 16V 25V 35V 50V Surge voltage (Vdc) 7.2V 12V 18V 29V 40V 58V 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

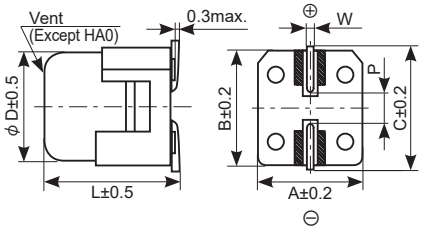
●Size code : E61 to LN0



Note : L±0.5 for HA0 to LN0

●Terminal Code : G

●Size code : HA0 to LN0



: Dummy terminals

Size code	D	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

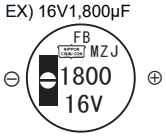
E61 to JA0 EX) 35V10μF

●Rated voltage symbol

E61 to JA0

Rated voltage(Vdc)	6.3	10	16	25	35
Symbol	j	A	C	E	V

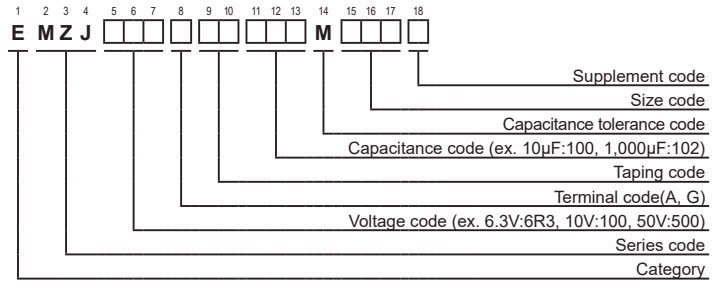
KE0 to LN0 EX) 16V1,800μF



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

◆ PART NUMBERING SYSTEM



◆ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size code	ESR (Ωmax./ 20℃,100kHz)	Rated ripple current (mArms/ 105℃,100kHz)	Part No.
6.3	100	E61	0.36	240	EMZJ6R3ARA101ME61G
	220	F61	0.26	300	EMZJ6R3ARA221MF61G
	330	F80	0.16	600	EMZJ6R3ARA331MF80G
	1,000	HA0	0.080	850	EMZJ6R3□RA102MHA0G
	1,500	JA0	0.060	1,190	EMZJ6R3□RA152MJA0G
	1,800	JA0	0.060	1,190	EMZJ6R3□RA182MJA0G
	3,300	KE0	0.051	1,210	EMZJ6R3□RA332MKE0S
	3,900	KG5	0.044	1,420	EMZJ6R3□RA392MKG5S
	6,800	LH0	0.035	1,850	EMZJ6R3□RA682MLH0S
	10,000	LN0	0.026	2,330	EMZJ6R3□RA103MLN0S
10	150	F61	0.26	300	EMZJ100ARA151MF61G
	680	HA0	0.080	850	EMZJ100□RA681MHA0G
	1,000	JA0	0.060	1,190	EMZJ100□RA102MJA0G
	1,200	JA0	0.060	1,190	EMZJ100□RA122MJA0G
	2,200	KE0	0.051	1,210	EMZJ100□RA222MKE0S
	2,700	KG5	0.044	1,420	EMZJ100□RA272MKG5S
	4,700	LH0	0.035	1,850	EMZJ100□RA472MLH0S
	6,800	LN0	0.026	2,330	EMZJ100□RA682MLN0S
16	47	E61	0.36	240	EMZJ160ARA470ME61G
	100	F61	0.26	300	EMZJ160ARA101MF61G
	150	F80	0.16	600	EMZJ160ARA151MF80G
	220	F80	0.16	600	EMZJ160ARA221MF80G
	470	HA0	0.080	850	EMZJ160□RA471MHA0G
	680	JA0	0.060	1,190	EMZJ160□RA681MJA0G
	820	JA0	0.060	1,190	EMZJ160□RA821MJA0G
	1,800	KE0	0.051	1,210	EMZJ160□RA182MKE0S
	2,200	KG5	0.044	1,420	EMZJ160□RA222MKG5S
	3,900	LH0	0.035	1,850	EMZJ160□RA392MLH0S
	5,600	LN0	0.026	2,330	EMZJ160□RA562MLN0S
25	22	E61	0.36	240	EMZJ250ARA220ME61G
25	33	E61	0.36	240	EMZJ250ARA330ME61G
	33	F61	0.26	300	EMZJ250ARA330MF61G
	47	F61	0.26	300	EMZJ250ARA470MF61G
	68	F61	0.26	300	EMZJ250ARA680MF61G
	100	F80	0.16	600	EMZJ250ARA101MF80G
	330	HA0	0.080	850	EMZJ250□RA331MHA0G
	470	JA0	0.060	1,190	EMZJ250□RA471MJA0G
	560	JA0	0.060	1,190	EMZJ250□RA561MJA0G
	1,200	KE0	0.051	1,210	EMZJ250□RA122MKE0S
	1,500	KG5	0.044	1,420	EMZJ250□RA152MKG5S
	2,200	LH0	0.035	1,850	EMZJ250□RA222MLH0S
	3,900	LN0	0.026	2,330	EMZJ250□RA392MLN0S
35	22	E61	0.36	240	EMZJ350ARA220ME61G
	33	F61	0.26	300	EMZJ350ARA330MF61G
	47	F61	0.26	300	EMZJ350ARA470MF61G
	68	F61	0.26	300	EMZJ350ARA680MF61G
	100	F80	0.16	600	EMZJ350ARA101MF80G
	100	HA0	0.080	850	EMZJ350□RA101MHA0G
	150	HA0	0.080	850	EMZJ350□RA151MHA0G
	220	HA0	0.080	850	EMZJ350□RA221MHA0G
	330	JA0	0.060	1,190	EMZJ350□RA331MJA0G
	390	JA0	0.060	1,190	EMZJ350□RA391MJA0G
	680	KE0	0.051	1,210	EMZJ350□RA681MKE0S
	820	KG5	0.044	1,420	EMZJ350□RA821MKG5S
	1,500	LH0	0.035	1,850	EMZJ350□RA152MLH0S
	2,700	LN0	0.026	2,330	EMZJ350□RA272MLN0S
50	390	KE0	0.105	930	EMZJ500□RA391MKE0S
	470	KG5	0.092	1,120	EMZJ500□RA471MKG5S
	1,000	LH0	0.073	1,660	EMZJ500□RA102MLH0S
	1,200	LN0	0.050	1,920	EMZJ500□RA122MLN0S

□ :Enter the appropriate terminal code.

◆ RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Size code	Frequency (Hz) / Capacitance (μF)	120	1k	10k	100k
E61 ～ JA0	22 ～ 150	0.40	0.75	0.90	1.00
	220 ～ 560	0.50	0.85	0.94	1.00
	680 ～ 1,800	0.60	0.87	0.95	1.00
KE0 ～ LN0	390 ～ 470	0.50	0.85	0.94	1.00
	680 ～ 1,800	0.60	0.87	0.95	1.00
	2,200 ～ 3,300	0.75	0.90	0.95	1.00
	3,900 ～ 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℃ rise.
When long life performance is required in actual use, the rms ripple current has to be reduced.