

# Alchip™-MZF Series

- Endurance : 10,000 hours at 105°C
- Low impedance
- Rated voltage range : 6.3 to 50V
- Nominal capacitance range : 10 to 470μF
- Suitable for long life and low profile products
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant

MLA  $\xrightarrow{\text{Longer life}}$  MZE  $\xrightarrow{\text{Longer life}}$  **MZF**

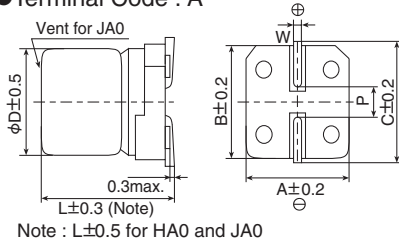


## ◆ SPECIFICATIONS

Items	Characteristics						
<b>Category</b>	-25 to +105°C						
<b>Temperature Range</b>	-25 to +105°C						
<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
	tan δ (Max.)	0.32	0.28	0.26	0.16	0.14	0.14
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Rated voltage(V <sub>dc</sub> )	6.3V	10V	16V	25V	35V	50V
	Z(-10°C)/Z(+20°C)	4	3	2	2	2	2
<b>Endurance</b>	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 10,000 hours at 105°C.						
	Capacitance change	≤ ±30% of the initial value					
	D.F. (tan δ)	≤ 300% 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)	≤ 300% of the initial specified value					
	Leakage current	≤ The initial specified value					

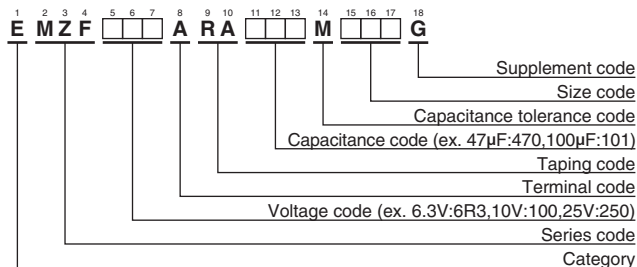
## ◆ DIMENSIONS [mm]

- Terminal Code : A



Size code	D	L	A	B	C	W	P
E73	5	7.0	5.3	5.3	5.9	0.5 to 0.8	1.4
F73	6.3	7.0	6.6	6.6	7.2	0.5 to 0.8	1.9
F90	6.3	8.7	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

## ◆ PART NUMBERING SYSTEM



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

## ◆ MARKING

EX) 16V47μF



- Rated voltage symbol

Rated voltage (V <sub>dc</sub> )	6.3	10	16	25	35	50
Symbol	j	A	C	E	V	H

Alchip™-MZF Series

◆STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Size code	Impedance (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	Impedance (Ω max./20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz)	Part No.
6.3	47	E73	2.2	95	EMZF6R3ARA470ME73G	25	33	F73	1.1	140	EMZF250ARA330MF73G
	100	F73	1.1	140	EMZF6R3ARA101MF73G		47	F73	1.1	140	EMZF250ARA470MF73G
	220	F90	1.0	230	EMZF6R3ARA221MF90G		100	F90	1.0	230	EMZF250ARA101MF90G
	330	F90	1.0	230	EMZF6R3ARA331MF90G		220	HA0	0.22	600	EMZF250ARA221MHA0G
	470	HA0	0.22	600	EMZF6R3ARA471MHA0G		330	JA0	0.16	850	EMZF250ARA331MJA0G
10	33	E73	2.2	95	EMZF100ARA330ME73G	35	10	E73	2.2	95	EMZF350ARA100ME73G
	150	F73	1.1	140	EMZF100ARA151MF73G		10	F73	1.1	140	EMZF350ARA100MF73G
16	22	E73	2.2	95	EMZF160ARA220ME73G		22	E73	2.2	95	EMZF350ARA220ME73G
	47	F73	1.1	140	EMZF160ARA470MF73G		22	F73	1.1	140	EMZF350ARA220MF73G
	100	F73	1.1	140	EMZF160ARA101MF73G		33	F90	1.0	230	EMZF350ARA330MF90G
	150	F90	1.0	230	EMZF160ARA151MF90G		47	F90	1.0	230	EMZF350ARA470MF90G
	220	F90	1.0	230	EMZF160ARA221MF90G		100	HA0	0.22	600	EMZF350ARA101MHA0G
	330	HA0	0.22	600	EMZF160ARA331MHA0G		220	JA0	0.16	850	EMZF350ARA221MJA0G
25	470	JA0	0.16	850	EMZF160ARA471MJA0G	50	47	HA0	0.53	350	EMZF500ARA470MHA0G
	22	E73	2.2	95	EMZF250ARA220ME73G		100	JA0	0.35	670	EMZF500ARA101MJA0G

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance(μF)	Frequency(Hz)			
	120	1k	10k	100k
10 to 150	0.40	0.75	0.90	1.00
220 to 470	0.50	0.85	0.94	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.