

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# Alchip™-MLA Series

- Low impedance, long life
- Rated voltage 6.3 to 50V, Capacitance 10 to 1,000μF
- Case size φ5×5.8L to φ10×10L
- Suitable for applications requiring long life and low impedance such as equipment in continuous operation, industrial applications, etc.
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant

MVY → Longer life → **MLA**  
P4-18

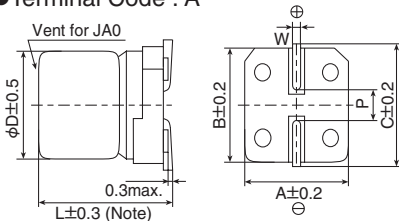


## ◆ SPECIFICATIONS

Items	Characteristics							
<b>Category</b>	-40 to +105°C							
<b>Temperature Range</b>	-40 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.)	E61 to F61	0.28	0.24	0.22	0.16	0.13	0.12
		F80	0.32	0.27	0.24	0.16	0.13	0.12
		HA0 to JA0	0.28	0.24	0.22	0.16	0.13	0.12
<b>Low Temperature Characteristics (Max. impedance Ratio)</b>	Rated voltage(V <sub>dc</sub> )	6.3V	10V	16V	25V	35V	50V	
	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	
	Z(-40°C)/Z(+20°C)	10	7	5	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 3,000 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



Note : L±0.5 for HA0 and JA0

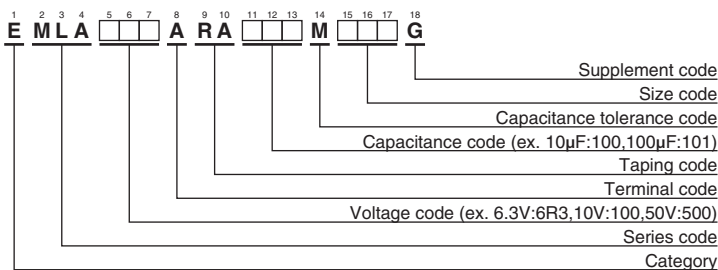
Size code	D	L	A	B	C	W	P
<b>E61</b>	5	5.8	5.3	5.3	5.9	0.5 to 0.8	1.4
<b>F61</b>	6.3	5.8	6.6	6.6	7.2	0.5 to 0.8	1.9
<b>F80</b>	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
<b>HA0</b>	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
<b>JA0</b>	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5

## ◆ MARKING

EX) 16V100μF



## ◆ PART NUMBERING SYSTEM



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

## ● Rated voltage symbol

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

◆ **STANDARD RATINGS**

WV (V <sub>dc</sub> )	Cap (μF)	Size code	tan δ	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	tan δ	Impedance (Ω max./20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz)	Part No.
6.3	47	E61	0.28	1.30	95	EMLA6R3ARA470ME61G	25	33	F61	0.16	0.70	140	EMLA250ARA330MF61G
	100	F61	0.28	0.70	140	EMLA6R3ARA101MF61G		47	F61	0.16	0.70	140	EMLA250ARA470MF61G
	150	F61	0.28	0.70	140	EMLA6R3ARA151MF61G		47	F80	0.16	0.70	230	EMLA250ARA470MF80G
	220	F80	0.32	0.70	230	EMLA6R3ARA221MF80G		100	F80	0.16	0.70	230	EMLA250ARA101MF80G
	330	F80	0.32	0.70	230	EMLA6R3ARA331MF80G		100	HA0	0.16	0.16	600	EMLA250ARA101MHA0G
	330	HA0	0.28	0.16	600	EMLA6R3ARA331MHA0G		150	HA0	0.16	0.16	600	EMLA250ARA151MHA0G
	470	HA0	0.28	0.16	600	EMLA6R3ARA471MHA0G		220	HA0	0.16	0.16	600	EMLA250ARA221MHA0G
1,000	JA0	0.28	0.08	850	EMLA6R3ARA102MJA0G	330	HA0	0.16	0.16	600	EMLA250ARA331MHA0G		
10	33	E61	0.24	1.30	95	EMLA100ARA330ME61G	330	JA0	0.16	0.08	850	EMLA250ARA331MJA0G	
	47	F61	0.24	0.70	140	EMLA100ARA470MF61G	470	JA0	0.16	0.08	850	EMLA250ARA471MJA0G	
	100	F61	0.24	0.70	140	EMLA100ARA101MF61G	35	10	E61	0.13	1.30	95	EMLA350ARA100ME61G
	150	F61	0.24	0.70	140	EMLA100ARA151MF61G		22	F61	0.13	0.70	140	EMLA350ARA220MF61G
	220	F80	0.27	0.70	230	EMLA100ARA221MF80G		33	F61	0.13	0.70	140	EMLA350ARA330MF61G
	220	HA0	0.24	0.16	600	EMLA100ARA221MHA0G		33	F80	0.13	0.70	230	EMLA350ARA330MF80G
	330	HA0	0.24	0.16	600	EMLA100ARA331MHA0G		47	F80	0.13	0.70	230	EMLA350ARA470MF80G
470	HA0	0.24	0.16	600	EMLA100ARA471MHA0G	100		F80	0.13	0.70	230	EMLA350ARA101MF80G	
22	E61	0.22	1.30	95	EMLA160ARA220ME61G	100		HA0	0.13	0.16	600	EMLA350ARA101MHA0G	
33	F61	0.22	0.70	140	EMLA160ARA330MF61G	150	HA0	0.13	0.16	600	EMLA350ARA151MHA0G		
47	F61	0.22	0.70	140	EMLA160ARA470MF61G	220	HA0	0.13	0.16	600	EMLA350ARA221MHA0G		
100	F61	0.22	0.70	140	EMLA160ARA101MF61G	220	JA0	0.13	0.08	850	EMLA350ARA221MJA0G		
100	F80	0.24	0.70	230	EMLA160ARA101MF80G	330	JA0	0.13	0.08	850	EMLA350ARA331MJA0G		
150	F80	0.24	0.70	230	EMLA160ARA151MF80G	50	10	F61	0.12	2.00	70	EMLA500ARA100MF61G	
220	F80	0.24	0.70	230	EMLA160ARA221MF80G		22	F61	0.12	2.00	70	EMLA500ARA220MF61G	
220	HA0	0.22	0.16	600	EMLA160ARA221MHA0G		33	F80	0.12	1.60	100	EMLA500ARA330MF80G	
330	HA0	0.22	0.16	600	EMLA160ARA331MHA0G		47	F80	0.12	1.60	100	EMLA500ARA470MF80G	
470	HA0	0.22	0.16	600	EMLA160ARA471MHA0G		47	HA0	0.12	0.34	350	EMLA500ARA470MHA0G	
470	JA0	0.22	0.08	850	EMLA160ARA471MJA0G		100	HA0	0.12	0.34	350	EMLA500ARA101MHA0G	
10	E61	0.16	1.30	95	EMLA250ARA100ME61G		100	JA0	0.12	0.18	670	EMLA500ARA101MJA0G	
22	E61	0.16	1.30	95	EMLA250ARA220ME61G	150	JA0	0.12	0.18	670	EMLA500ARA151MJA0G		
22	F61	0.16	0.70	140	EMLA250ARA220MF61G	220	JA0	0.12	0.18	670	EMLA500ARA221MJA0G		

◆ **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
1,000		0.60	0.87	0.95	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.