

**Alchip™-MVL Series**

**MVL**

↑ Longer life  
MVJ



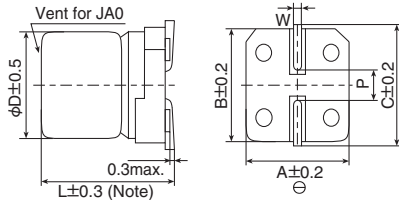
- Endurance : 3,000 to 5,000 hours at 105°C
- Suitable for applications requiring long life such as continuously operating equipment, industrial applications, etc
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant

**◆ SPECIFICATIONS**

Items	Characteristics						
<b>Category 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=0.03CV or 4μA, 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
	Max. tan δ	0.28	0.24	0.20	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 specified time at 105°C.						
	Time	D60 to F80 : 3,000 hours HA0 & JA0 : 5,000 hours					
	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					

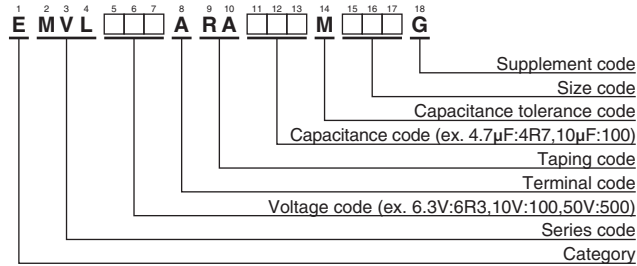
**◆ DIMENSIONS [mm]**

● Terminal Code : A



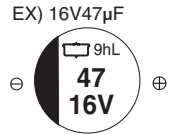
Size code	D	L	A	B	C	W	P
D60	4	5.7	4.3	4.3	5.1	0.5 to 0.8	1.0
E60	5	5.7	5.3	5.3	5.9	0.5 to 0.8	1.4
F60	6.3	5.7	6.6	6.6	7.2	0.5 to 0.8	1.9
F80	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
HA0	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
JA0	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5

**◆ PART NUMBERING SYSTEM**



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

**◆ MARKING**





Alchip™-**MVL**Series

◆ **STANDARD RATINGS**

WV (V <sub>dc</sub> )	Cap (μF)	Size code	tan δ	Rated ripple current (mA <sub>rms</sub> /105°C, 120Hz)	Part No.	WV (V <sub>dc</sub> )	Cap (μF)	Size code	tan δ	Rated ripple current (mA <sub>rms</sub> /105°C, 120Hz)	Part No.
6.3	22	D60	0.28	22	EMVL6R3ARA220MD60G	35	4.7	D60	0.13	15	EMVL350ARA4R7MD60G
	47	E60	0.28	36	EMVL6R3ARA470ME60G		10	E60	0.13	25	EMVL350ARA100ME60G
	100	F60	0.28	60	EMVL6R3ARA101MF60G		22	F60	0.13	42	EMVL350ARA220MF60G
	220	F80	0.28	101	EMVL6R3ARA221MF80G		33	F80	0.13	57	EMVL350ARA330MF80G
	330	HA0	0.28	160	EMVL6R3ARA331MHA0G		220	JA0	0.13	216	EMVL350ARA221MJA0G
10	1,000	JA0	0.28	313	EMVL6R3ARA102MJA0G	50	1.0	D60	0.12	6.2	EMVL500ARA1R0MD60G
	33	E60	0.24	35	EMVL100ARA330ME60G		2.2	D60	0.12	11	EMVL500ARA2R2MD60G
220	HA0	0.24	141	EMVL100ARA221MHA0G	3.3		D60	0.12	14	EMVL500ARA3R3MD60G	
16	10	D60	0.20	18	EMVL160ARA100MD60G		4.7	E60	0.12	19	EMVL500ARA4R7ME60G
	22	E60	0.20	30	EMVL160ARA220ME60G		10	F60	0.12	30	EMVL500ARA100MF60G
	47	F60	0.20	50	EMVL160ARA470MF60G	22	F80	0.12	49	EMVL500ARA220MF80G	
	100	F80	0.20	81	EMVL160ARA101MF80G	33	HA0	0.12	77	EMVL500ARA330MHA0G	
	470	JA0	0.20	254	EMVL160ARA471MJA0G	47	HA0	0.12	92	EMVL500ARA470MHA0G	
25	33	F60	0.16	48	EMVL250ARA330MF60G	100	JA0	0.12	151	EMVL500ARA101MJA0G	
	47	F80	0.16	63	EMVL250ARA470MF80G						
	100	HA0	0.16	116	EMVL250ARA101MHA0G						
	330	JA0	0.16	238	EMVL250ARA331MJA0G						

Production of the products shown in   is scheduled to be discontinued.

◆ **RATED RIPPLE CURRENT MULTIPLIERS**

● Frequency Multipliers

Capacitance(μF)	Frequency(Hz)			
	120	1k	10k	100k
1.0	1.00	1.50	1.75	1.80
2.2 to 10	1.00	1.30	1.40	1.50
22 to 1,000	1.00	1.05	1.08	1.08

The deterioration of aluminum electrolytic capacitors accelerates their life due to the internal heating produced by ripple current. For details, refer to Section "5-3 Ripple Current Effect on Lifetime" in the catalog, Technical Note.



- Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.
- Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.
- The products listed in this catalog are designed and manufactured for general electronics equipment use and are not intended for use in applications that can adversely affect human life; where the malfunction of equipment may cause damage to life or property. In addition, our products are not intended to be used in specific applications that may cause a major social impact. Please consult with us in advance of usage of our products in the following listed applications. ① Aerospace equipment ② Power generation equipment such as thermal power, nuclear power etc. ③ Medical equipment ④ Transport equipment (automobiles, trains, ships, etc.) ⑤ Transportation control equipment ⑥ Disaster prevention / crime prevention equipment ⑦ Highly publicized information processing equipment ⑧ Submarine equipment ⑨ Other applications that are not considered general-purpose applications.
- The circuits described as examples in this catalog and the "delivery specifications" are featured in order to show the operations and usage of our products, however, this fact does not guarantee that the circuits are available to function in your equipment systems. We are not in any case responsible for any failures or damage caused by the use of information contained herein. You should examine our products, of which the characteristics are described in the "delivery specifications" and other documents, and determine whether or not our products suit your requirements according to the specifications of your equipment systems. Therefore, you bear final responsibility regarding the use of our products.  
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- We strongly recommend our customers to purchase Nippon Chemi-Con products only through our official sales channels. We assume no responsibility for any defects or damages caused by using products purchased from outside our official sales channel or of counterfeit goods. In addition, we will ask the customer to pay the investigation cost for products purchased outside our official sales channel.
- We reserve the right to discontinue production and delivery of products. We do not guarantee that all the products included in this catalog will be available in the future.  
The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products
- We continually strive to improve the quality and reliability of our products, but in any case that our product does not meet our published specifications, please stop using it promptly and contact us immediately. As for compensation for non-conforming goods delivered by Chemi-Con, we will limit it only to goods found in non-compliance of our published specifications. This may be accomplished by a no cost replacement of non-conforming individual products, a credit of the piece price paid per each individual non-conforming product, or in other ways deemed necessary.  
In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.

[Part Numbering System](#)

[Part Numbering System \(Appendix\)](#)

[Standardization](#)

[Available Items by Manufacturing Locations](#)

[Environmental Measures](#)

[Technical Note](#)

[Precautions and Guidelines](#)

[Recommended Soldering Conditions](#)

[Taping, Lead-preforming and Packaging](#)

[Available Terminals for Snap-in and Screw Mount Type](#)