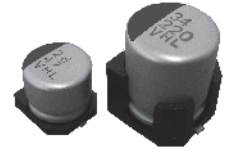


# Alchip™-MHL Series

- Downsized and Longer life from current MVH series
- Endurance : 2,000 to 4,000 hours at 125°C
- Rated voltage range : 10 to 35V. Nominal capacitance range : 47 to 680μF
- For automobile modules and other high temperature applications
- 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.

MHL

↑  
Downsized  
Longer life  
MVH



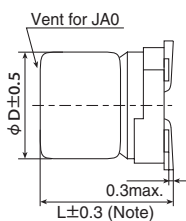
## ◆ SPECIFICATIONS

Items	Characteristics	
<b>Category</b>	-40 to +125°C	
<b>Temperature Range</b>		
<b>Rated Voltage Range</b>	10 to 35V <sub>dc</sub>	
<b>Capacitance Tolerance</b>	±20%(M) (at 20°C, 120Hz)	
<b>Leakage Current</b>	I=0.01CV 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> )	10V 16V 25V 35V
	tan δ (Max.)	0.24 0.20 0.16 0.14 (at 20°C, 120Hz)
<b>Low Temperature Characteristics (Max. impedance Ratio)</b>	Rated voltage(V <sub>dc</sub> )	10V 16V 25V 35V
	Z(-25°C)/Z(+20°C)	3 2 2 2 (at 120Hz)
	Z(-40°C)/Z(+20°C)	6 4 4 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 125°C.	
	Time	F61 & F80 : 2,000 hours HA0 & JA0 : 4,000 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 125°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

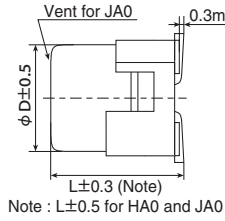
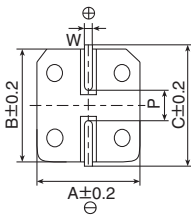
## ◆ DIMENSIONS [mm]

- Terminal Code : A
- Size code : F61 to JA0

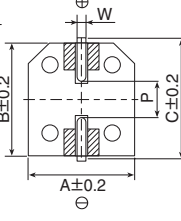
- Terminal Code : G (Vibration resistant structure)
- Size code : F61 to JA0



Note : L±0.5 for HA0 and JA0



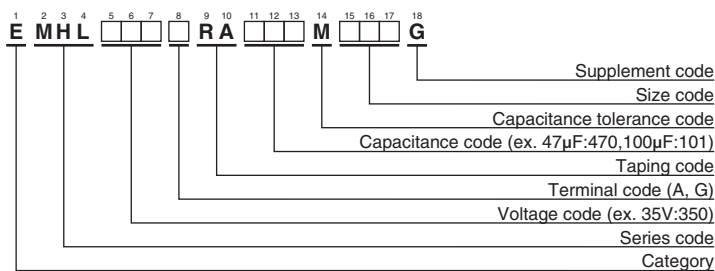
Note : L±0.5 for HA0 and JA0



▨ : Dummy terminals

Size code	φD	L	A	B	C	W	P
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

## ◆ PART NUMBERING SYSTEM



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

## ◆ MARKING

EX) 35V47μF



- Rated voltage symbol

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

**Alchip™-MHL Series**
**◆STANDARD RATINGS**

WV (V <sub>dc</sub> )	Cap (μF)	Size code	ESR (Ω max./100kHz)		Rated ripple current (mA <sub>rms</sub> /125°C, 100kHz)	Part No.
			20°C	-40°C		
10	100	F61	1.2	22	110	EMHL100 □ RA101MF61G
	220	F80	0.60	12	220	EMHL100 □ RA221MF80G
	330	HA0	0.30	5.5	296	EMHL100 □ RA331MHA0G
	470	HA0	0.30	5.5	296	EMHL100 □ RA471MHA0G
	680	JA0	0.20	3.6	440	EMHL100 □ RA681MJA0G
16	47	F61	1.2	22	110	EMHL160 □ RA470MF61G
	100	F61	1.2	22	110	EMHL160 □ RA101MF61G
	220	F80	0.60	12	220	EMHL160 □ RA221MF80G
	330	HA0	0.30	5.5	296	EMHL160 □ RA331MHA0G
	470	JA0	0.20	3.6	440	EMHL160 □ RA471MJA0G
	680	JA0	0.20	3.6	440	EMHL160 □ RA681MJA0G
25	47	F61	1.2	22	110	EMHL250 □ RA470MF61G
	100	F80	0.60	12	220	EMHL250 □ RA101MF80G
	220	HA0	0.30	5.5	296	EMHL250 □ RA221MHA0G
	330	JA0	0.20	3.6	440	EMHL250 □ RA331MJA0G
35	47	F61	1.2	22	110	EMHL350 □ RA470MF61G
	100	F80	0.60	12	220	EMHL350 □ RA101MF80G
	220	HA0	0.30	5.5	296	EMHL350 □ RA221MHA0G
	330	JA0	0.20	3.6	440	EMHL350 □ RA331MJA0G

□ : Enter the appropriate terminal code.

**◆RATED RIPPLE CURRENT MULTIPLIERS**
**●Frequency Multipliers**

Capacitance(μF)	Frequency(Hz)			
	120	1k	10k	100k
47 to 680	0.93	0.97	1.00	1.00

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.