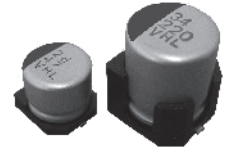


# Alchip™-MHL Series

- 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



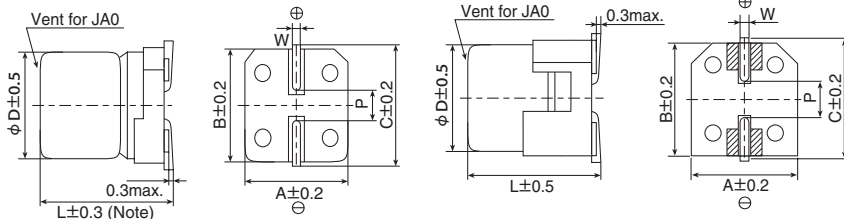
## ◆ SPECIFICATIONS

Items	Characteristics				
<b>Category</b>	-40 to +125°C				
<b>Temperature Range</b>	-40 to +125°C				
<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
<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
	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

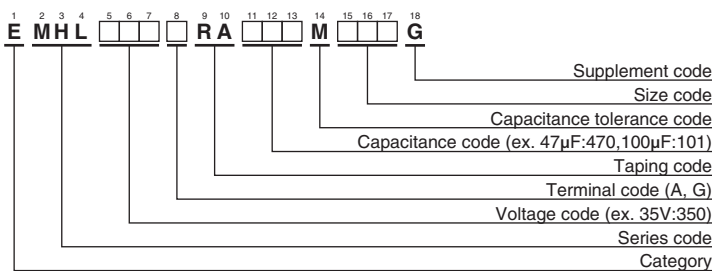
- Terminal Code : G(Vibration resistant structure)
- Size code : HA0 and JA0



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

▨ : Dummy terminals

## ◆ 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	EMHL100ARA101MF61G
	220	F80	0.60	12	220	EMHL100ARA221MF80G
	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	EMHL160ARA470MF61G
	100	F61	1.2	22	110	EMHL160ARA101MF61G
	220	F80	0.60	12	220	EMHL160ARA221MF80G
	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	EMHL250ARA470MF61G
	100	F80	0.60	12	220	EMHL250ARA101MF80G
	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	EMHL350ARA470MF61G
	100	F80	0.60	12	220	EMHL350ARA101MF80G
	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 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.