Alchip™-MHK Series

- Endurance : 2,000 hours at 125℃
- Specified ESR after endurance
- For automobile modules and other high temperature applications
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.

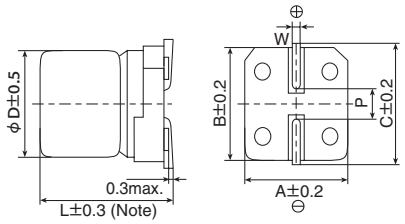
MHK
↑ Lower ESR
MHJ

◆SPECIFICATIONS

Items	Characteristics		
Category Temperature Range	-40 to +125℃		
Rated Voltage Range	35V_{dc}		
Capacitance Tolerance	±20%(M)		(at 20℃, 120Hz)
Leakage Current	I=0.01CV Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)		(at 20℃ after 2 minute)
Dissipation Factor (tan δ)	Rated voltage(V_{dc})	35V	
	tan δ (Max.)	0.14	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. impedance Ratio)	Rated voltage(V_{dc})	35V	
	Z(-25℃)/Z(+20℃)	2	
	Z(-40℃)/Z(+20℃)	3	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 2,000 hours at 125℃.		
	Capacitance change	≦±30% of the initial value	
	D.F. (tan δ)	≦300% of the initial specified value	
	Leakage current	≦The initial specified value	
	ESR(Ω max./-40℃, 400kHz)	F80	6.0
		HA0	4.5
Shelf life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 125℃ 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	

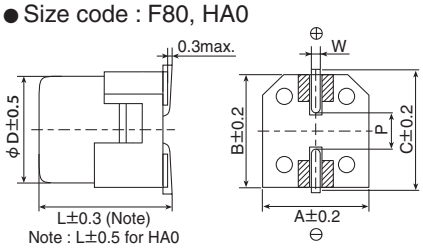
◆DIMENSIONS [mm]

● Terminal Code : A
● Size code : F80, HA0



Note : L±0.5 for HA0

● Terminal Code : G(Vibration resistant structure)
● Size code : F80, HA0



Note : L±0.5 for HA0

▨ : Dummy terminals

Size code	D	L	A	B	C	W	P
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

◆PART NUMBERING SYSTEM

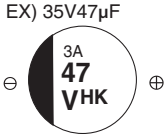
1	2 3 4	5 6 7	8	9 10	11 12 13	14	15 16 17	18
E	MHK	3 5 0	□	R A	□□□	M	□□□	G

- 18 G : Supplement code
- 15 16 17 □□□ : Size code
- 14 M : Capacitance tolerance code
- 11 12 13 □□□ : Capacitance code (ex. 47μF:470,100μF:101)
- 9 10 RA : Taping code
- 8 □ : Terminal code
- 5 6 7 350 : Voltage code (ex.35V:350)
- 2 3 4 MHK : Series code
- 1 E : Category

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

◆MARKING

EX) 35V47μF



●Rated voltage symbol

Rated voltage (V_{dc})	Symbol
35	V

Alchip™-MHK Series

◆STANDARD RATINGS

WV (V_{dc})	Cap (μF)	Size code	ESR (Ω max./100k to 400kHz)		Rated ripple current (mArms/125℃, 100k to 400kHz)	Part No.
			20℃	-40℃		
35	47	F80	0.30	3.0	240	EMHK350□RA470MF80G
	100	F80	0.30	3.0	240	EMHK350□RA101MF80G
	220	HA0	0.20	2.0	330	EMHK350□RA221MHA0G

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

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

■ 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.
Please make sure that you take appropriate safety measures such as use of redundant design and malfunction prevention measures in order to prevent fatal accidents and/or fires in the event any of our products malfunction.

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■ 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

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In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.

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