

# Alchip™-MHS Series



- Downsizing, High capacitance
- Endurance : 2,000 to 5,000 hours at 125°C
- For high temperature and high reliability applications (Base station equipment, etc)
- High temperature reflow soldering
- 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.

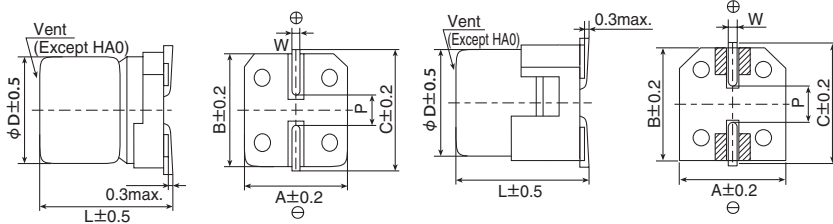
## ◆SPECIFICATIONS

Items	Characteristics								
<b>Category</b>	-40 to +125°C								
<b>Temperature Range</b>	-40 to +125°C								
<b>Rated Voltage Range</b>	16 to 100V <sub>dc</sub>								
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)								
<b>Leakage Current</b>	HA0, JA0	I=0.01CV							
	KE0 to MN0	I=0.03CV							
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> )	16V	25V	35V	50V	63V	80V	100V	
	tan δ (Max.)	HA0, JA0	0.20	0.16	0.14	0.14	0.14	0.12	—
		KE0 to MN0	0.18	0.14	0.14	0.14	0.14	0.12	0.10
When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)									
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Rated voltage (V <sub>dc</sub> )	16V	25V	35V	50V	63V	80V	100V	
	HA0, JA0	Z(-25°C)/Z(+20°C)	2	2	2	2	2	2	—
		Z(-40°C)/Z(+20°C)	4	4	3	3	3	3	—
	KE0 to MN0	Z(-25°C)/Z(+20°C)	3	2	2	2	2	2	2
Z(-40°C)/Z(+20°C)		6	4	3	3	3	3	3	
(at 120Hz)									
<b>Endurance</b>	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for the specified time at 125°C.								
	Time	HA0, JA0 : 2,000hours KE0 to MN0 : 5,000hours							
	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 : HA0 to MN0

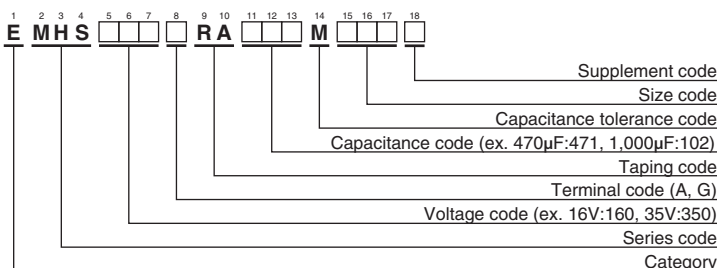
- Terminal Code : G(Vibration resistant structure)
- Size code : HA0 to MN0



Size code	φD	L	A	B	C	W	P
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
KE0	12.5	13.5	13.0	13.0	13.7	1.0 to 1.3	4.2
KG5	12.5	16.0	13.0	13.0	13.7	1.0 to 1.3	4.2
LH0	16	16.5	17.0	17.0	18.0	1.0 to 1.3	6.5
LN0	16	21.5	17.0	17.0	18.0	1.0 to 1.3	6.5
MH0	18	16.5	19.0	19.0	20.0	1.0 to 1.3	6.5
MN0	18	21.5	19.0	19.0	20.0	1.0 to 1.3	6.5

▨ : Dummy terminals

## ◆PART NUMBERING SYSTEM

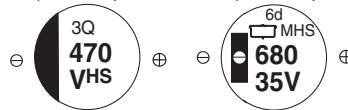


Please refer to "Product code guide (surface mount type)"

## ◆MARKING

EX) 35V470μF

EX) 35V680μF



- Rated voltage symbol (HA0, JA0)

Rated voltage (V <sub>dc</sub> )	16	25	35	50	63	80
Symbol	C	E	V	H	J	K



Alchip™-MHS Series

◆STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Size code	ESR (Ω max./100kHz)		Rated ripple current (mArms/125°C, 100kHz)	Part No.
			20°C	-40°C		
16	680	HA0	0.19	2.6	620	EMHS160□RA681MHA0G
	1,000	JA0	0.13	1.7	780	EMHS160□RA102MJA0G
	1,500	KE0	0.087	1.1	1,060	EMHS160□RA152MKE0S
	2,000	KG5	0.070	0.84	1,160	EMHS160□RA202MKG5S
	2,700	LH0	0.057	0.59	1,900	EMHS160□RA272MLH0S
	3,600	MH0	0.055	0.44	2,000	EMHS160□RA362MMH0S
	4,700	LNO	0.037	0.39	2,520	EMHS160□RA472MLN0S
	6,200	MNO	0.036	0.28	2,570	EMHS160□RA622MMN0S
25	470	HA0	0.19	2.6	620	EMHS250□RA471MHA0G
	680	JA0	0.13	1.7	780	EMHS250□RA681MJA0G
	1,000	KE0	0.087	1.1	1,060	EMHS250□RA102MKE0S
	1,300	KG5	0.070	0.84	1,160	EMHS250□RA132MKG5S
	1,800	LH0	0.057	0.59	1,900	EMHS250□RA182MLH0S
	2,400	MH0	0.055	0.44	2,000	EMHS250□RA242MMH0S
	3,300	LNO	0.037	0.39	2,520	EMHS250□RA332MLN0S
	4,300	MNO	0.036	0.28	2,570	EMHS250□RA432MMN0S
35	220	HA0	0.19	2.6	620	EMHS350□RA221MHA0G
	270	HA0	0.19	2.6	620	EMHS350□RA271MHA0G
	470	JA0	0.13	1.7	780	EMHS350□RA471MJA0G
	680	KE0	0.087	1.1	1,060	EMHS350□RA681MKE0S
	820	KG5	0.070	0.84	1,160	EMHS350□RA821MKG5S
	1,200	LH0	0.057	0.59	1,900	EMHS350□RA122MLH0S
	1,500	MH0	0.055	0.44	2,000	EMHS350□RA152MMH0S
	2,000	LNO	0.037	0.39	2,520	EMHS350□RA202MLN0S
50	100	HA0	0.65	8.1	440	EMHS500□RA101MHA0G
	150	JA0	0.45	4.6	600	EMHS500□RA151MJA0G
	180	JA0	0.45	4.6	600	EMHS500□RA181MJA0G
	360	KE0	0.16	2.0	880	EMHS500□RA361MKE0S
	470	KG5	0.12	1.5	970	EMHS500□RA471MKG5S
	560	LH0	0.088	0.94	1,640	EMHS500□RA561MLH0S
	750	MH0	0.085	0.78	1,720	EMHS500□RA751MMH0S
	1,000	LNO	0.056	0.61	2,230	EMHS500□RA102MLN0S
63	68	HA0	0.65	8.1	440	EMHS630□RA680MHA0G
	82	HA0	0.65	8.1	440	EMHS630□RA820MHA0G
	100	JA0	0.45	4.6	600	EMHS630□RA101MJA0G
	120	JA0	0.45	4.6	600	EMHS630□RA121MJA0G
	240	KE0	0.17	2.5	920	EMHS630□RA241MKE0S
	330	KG5	0.13	1.8	1,030	EMHS630□RA331MKG5S
	430	LH0	0.098	1.3	1,640	EMHS630□RA431MLH0S
	560	MH0	0.091	0.98	1,720	EMHS630□RA561MMH0S
	680	LNO	0.063	0.80	2,230	EMHS630□RA681MLN0S
	910	MNO	0.059	0.59	2,300	EMHS630□RA911MMN0S
80	47	HA0	0.65	8.1	440	EMHS800□RA470MHA0G
	68	JA0	0.45	4.6	600	EMHS800□RA680MJA0G
	82	JA0	0.45	4.6	600	EMHS800□RA820MJA0G
	180	KE0	0.17	2.5	920	EMHS800□RA181MKE0S
	240	KG5	0.13	1.8	1,030	EMHS800□RA241MKG5S
	270	LH0	0.098	1.3	1,640	EMHS800□RA271MLH0S
	360	MH0	0.091	0.98	1,720	EMHS800□RA361MMH0S
	430	LNO	0.063	0.80	2,230	EMHS800□RA431MLN0S
100	560	MNO	0.059	0.59	2,300	EMHS800□RA561MMN0S
	110	KE0	0.17	2.5	920	EMHS101□RA111MKE0S
	150	KG5	0.13	1.8	1,030	EMHS101□RA151MKG5S
	160	LH0	0.098	1.3	1,640	EMHS101□RA161MLH0S
	200	MH0	0.091	0.98	1,720	EMHS101□RA201MMH0S
	240	LNO	0.063	0.80	2,230	EMHS101□RA241MLN0S
330	MNO	0.059	0.59	2,300	EMHS101□RA331MMN0S	

□ : Enter the appropriate terminal code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Size code	Capacitance(μF)	Frequency(Hz)			
		120	1k	10k	100k
HA0, JA0	47 to 180	0.40	0.75	0.90	1.00
	220 to 470	0.50	0.85	0.94	1.00
	680 to 1,000	0.60	0.87	0.95	1.00
KE0 to MNO	110 to 200	0.40	0.75	0.90	1.00
	220 to 620	0.50	0.85	0.94	1.00
	680 to 2,000	0.60	0.87	0.95	1.00
	2,400 to 4,300	0.75	0.90	0.95	1.00
	4,700 to 6,200	0.85	0.95	0.98	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.

Product specifications in this catalog are subject to change without notice. Request our product specifications before purchase and/or use. Please use our products based on the information contained in this catalog and product specifications.



- 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.
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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.

[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](#)

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