Alchip™-MVH Series

- Lower ESR, Higher ripple current
- Endurance : 1,000 to 5,000 hours at 125℃
- Suitable to fit for automotive equipment
- Solvent resistant type except 63 to 100Vdc (see PRECAUTIONS AND GUIDELINES)
- Vibration resistant structure
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.

MVH
125℃
MVE

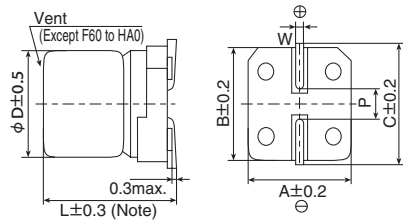
◆SPECIFICATIONS

Items	Characteristics									
Category Temperature Range	-40 to +125℃									
Rated Voltage Range	10 to 100Vdc									
Capacitance Tolerance	±20% (M)									(at 20℃, 120Hz)
Leakage Current	F60 to JA0	I=0.01CV or 3μA, whichever is greater.								
	KE0 to MN0	I=0.03CV or 4μA, whichever is greater.								
	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)									(at 20℃ after 2 minutes)
Dissipation Factor (tan δ)	Rated voltage (Vdc)		10V	16V	25V	35V	50V	63V	80V	100V
	tan δ (Max.)	F60 to JA0	0.24	0.20	0.16	0.14	0.14	0.12	0.12	0.10
		KE0 to MN0	0.22	0.18	0.16	0.14	0.12	0.14	—	0.10
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.									(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)		10V	16V	25V	35V	50V	63V	80V	100V
	F60 to JA0	Z(-25℃)/Z(+20℃)	3	2	2	2	2	2	2	2
		Z(-40℃)/Z(+20℃)	6	4	4	3	3	3	3	3
	KE0 to MN0	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2	—	2
		Z(-40℃)/Z(+20℃)	8	6	4	3	3	3	—	3
										(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for the specified time at 125℃.									
	Time	F60 to H63 (10 to 100Vdc) : 1,000hours HA0 to JA0 (10 to 100Vdc) : 2,000hours KE0 to MN0 (10 to 100Vdc) : 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								
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.									
	Rated voltage(Vdc)	10 to 50Vdc				63 to 100Vdc				
	Capacitance change	≦±30% of the initial value				≦±30% of the initial value				
	D.F. (tan δ)	≦300% of the initial specified value				≦300% of the initial specified value				
	Leakage current	≦The initial specified value				≦500% of the initial specified value				

◆DIMENSIONS [mm]

● Terminal Code : A

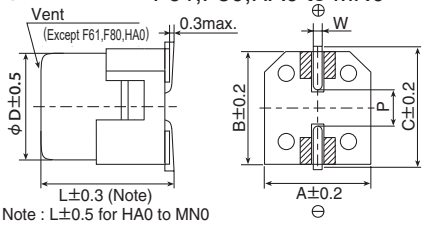
● Size code : F60 to MN0



Note : L±0.5 for HA0 to MN0

● Terminal Code : G(Vibration resistant structure)

● Size code : F61,F80,HA0 to MN0

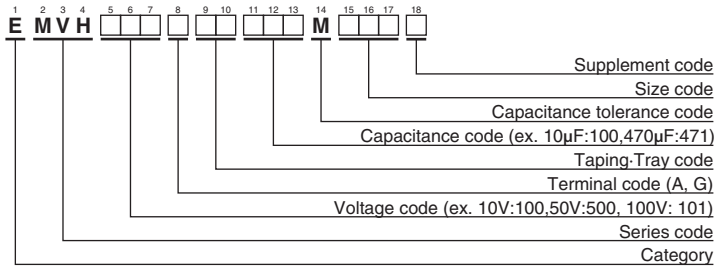


Note : L±0.5 for HA0 to MN0

: Dummy terminals

Size code	D	L	A	B	C	W	P
F60	6.3	5.7	6.6	6.6	7.2	0.5～0.8	1.9
F61	6.3	5.8	6.6	6.6	7.2	0.5～0.8	1.9
F80	6.3	7.7	6.6	6.6	7.2	0.5～0.8	1.9
H63	8	6.3	8.3	8.3	9	0.5～0.8	2.3
HA0	8	10	8.3	8.3	9	0.7～1.1	3.1
JA0	10	10	10.3	10.3	11	0.7～1.1	4.5
KE0	12.5	13.5	13.0	13.0	13.7	1.0～1.3	4.2
KG5	12.5	16.0	13.0	13.0	13.7	1.0～1.3	4.2
LH0	16	16.5	17.0	17.0	18.0	1.0～1.3	6.5
LN0	16	21.5	17.0	17.0	18.0	1.0～1.3	6.5
MH0	18	16.5	19.0	19.0	20.0	1.0～1.3	6.5

◆PART NUMBERING SYSTEM

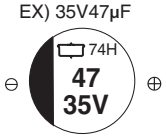


Please refer to "Product code guide (surface mount type)"

◆MARKING

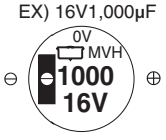
F60 to JA0

EX) 35V47μF



KE0 to MN0

EX) 16V1,000μF



Alchip™-MVH Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size code	ESR (Ω max./100kHz) 20℃	ESR (Ω max./100kHz) -40℃	Rated ripple current (mArms/ 125℃,100kHz)	Part No.
10	100	F80	0.90	14.0	110	EMVH100 □ RA101MF80G
	100	H63	0.90	14.0	110	EMVH100ARA101MH63G
	220	F80	0.90	14.0	110	EMVH100 □ RA221MF80G
	220	H63	0.90	14.0	110	EMVH100ARA221MH63G
	220	HA0	0.40	6.0	220	EMVH100 □ RA221MHA0G
	330	HA0	0.40	6.0	220	EMVH100 □ RA331MHA0G
	330	JA0	0.30	4.5	296	EMVH100 □ RA331MJA0G
	470	JA0	0.30	4.5	296	EMVH100 □ RA471MJA0G
	1,000	KE0	0.14	2.1	750	EMVH100 □ RA102MKE0S
	2,200	LH0	0.10	1.5	1,000	EMVH100 □ RA222MLH0S
	2,200	MH0	0.10	1.5	1,200	EMVH100 □ RA222MMH0S
	3,300	MH0	0.10	1.5	1,200	EMVH100 □ RA332MMH0S
	4,700	MN0	0.058	0.87	1,550	EMVH100 □ RA472MMN0S
16	47	F60	1.6	24.0	69	EMVH160ARA470MF60G
	47	F61	1.6	24.0	69	EMVH160 □ RA470MF61G
	100	HA0	0.40	6.0	220	EMVH160 □ RA101MHA0G
	220	HA0	0.40	6.0	220	EMVH160 □ RA221MHA0G
	220	JA0	0.30	4.5	296	EMVH160 □ RA221MJA0G
	330	JA0	0.30	4.5	296	EMVH160 □ RA331MJA0G
	470	KE0	0.14	2.1	750	EMVH160 □ RA471MKE0S
	680	KE0	0.14	2.1	750	EMVH160 □ RA681MKE0S
	680	LH0	0.10	1.5	1,000	EMVH160 □ RA681MLH0S
	1,000	MH0	0.10	1.5	1,200	EMVH160 □ RA102MMH0S
	2,200	MH0	0.10	1.5	1,200	EMVH160 □ RA222MMH0S
25	33	F60	1.6	24.0	69	EMVH250ARA330MF60G
	33	F61	1.6	24.0	69	EMVH250 □ RA330MF61G
	47	F80	0.90	14.0	110	EMVH250 □ RA470MF80G
	47	H63	0.90	14.0	110	EMVH250ARA470MH63G
	100	F80	0.90	14.0	110	EMVH250 □ RA101MF80G
	100	H63	0.90	14.0	110	EMVH250ARA101MH63G
	100	HA0	0.40	6.0	220	EMVH250 □ RA101MHA0G
	220	HA0	0.40	6.0	220	EMVH250 □ RA221MHA0G
	220	JA0	0.30	4.5	296	EMVH250 □ RA221MJA0G
	330	JA0	0.30	4.5	296	EMVH250 □ RA331MJA0G
	330	KE0	0.14	2.1	750	EMVH250 □ RA331MKE0S
	470	KE0	0.14	2.1	750	EMVH250 □ RA471MKE0S
	470	LH0	0.10	1.5	1,000	EMVH250 □ RA471MLH0S
	680	LH0	0.10	1.5	1,000	EMVH250 □ RA681MLH0S
	680	MH0	0.10	1.5	1,200	EMVH250 □ RA681MMH0S
	1,000	MN0	0.058	0.87	1,550	EMVH250 □ RA102MMN0S
35	10	F60	1.6	24.0	69	EMVH350ARA100MF60G
	10	F61	1.6	24.0	69	EMVH350 □ RA100MF61G
	22	F60	1.6	24.0	69	EMVH350ARA220MF60G
	22	F61	1.6	24.0	69	EMVH350 □ RA220MF61G
	33	F80	0.90	14.0	110	EMVH350 □ RA330MF80G
	33	H63	0.90	14.0	110	EMVH350ARA330MH63G
	47	F80	0.90	14.0	110	EMVH350 □ RA470MF80G
	47	H63	0.90	14.0	110	EMVH350ARA470MH63G
	47	HA0	0.40	6.0	220	EMVH350 □ RA470MHA0G
	100	HA0	0.40	6.0	220	EMVH350 □ RA101MHA0G

WV (Vdc)	Cap (μF)	Size code	ESR (Ω max./100kHz) 20℃	ESR (Ω max./100kHz) -40℃	Rated ripple current (mArms/ 125℃,100kHz)	Part No.
35	100	JA0	0.30	4.5	296	EMVH350 □ RA101MJA0G
	220	JA0	0.30	4.5	296	EMVH350 □ RA221MJA0G
	330	KE0	0.14	2.1	750	EMVH350 □ RA331MKE0S
	330	LH0	0.10	1.5	1,000	EMVH350 □ RA331MLH0S
	470	KG5	0.11	1.5	900	EMVH350 □ RA471MKG5S
	470	LH0	0.10	1.5	1,000	EMVH350 □ RA471MLH0S
	680	MH0	0.10	1.5	1,200	EMVH350 □ RA681MMH0S
50	10	F60	2.8	42.0	51	EMVH500ARA100MF60G
	10	F61	2.8	42.0	51	EMVH500 □ RA100MF61G
	10	H63	1.6	30.0	83	EMVH500ARA100MH63G
	22	F80	2.0	30.0	83	EMVH500 □ RA220MF80G
	22	H63	1.6	30.0	83	EMVH500ARA220MH63G
	33	F80	2.0	30.0	83	EMVH500 □ RA330MF80G
	33	H63	1.6	30.0	83	EMVH500ARA330MH63G
	33	HA0	0.70	11.0	160	EMVH500 □ RA330MHA0G
	47	HA0	0.70	11.0	160	EMVH500 □ RA470MHA0G
	47	JA0	0.50	7.5	247	EMVH500 □ RA470MJA0G
	100	JA0	0.50	7.5	247	EMVH500 □ RA101MJA0G
	100	KE0	0.23	3.5	550	EMVH500 □ RA101MKE0S
	220	KE0	0.23	3.5	550	EMVH500 □ RA221MKE0S
	220	LH0	0.15	2.3	850	EMVH500 □ RA221MLH0S
	330	KG5	0.18	2.7	700	EMVH500 □ RA331MKG5S
	330	LH0	0.15	2.3	850	EMVH500 □ RA331MLH0S
	470	MH0	0.15	2.3	920	EMVH500 □ RA471MMH0S
※1 63	10	F80	2.0	100	60	EMVH630 □ RA100MF80G
	10	H63	2.0	110	60	EMVH630ARA100MH63G
	22	HA0	0.70	35.0	100	EMVH630 □ RA220MHA0G
	33	HA0	0.70	35.0	100	EMVH630 □ RA330MHA0G
	33	JA0	0.50	25.0	170	EMVH630 □ RA330MJA0G
	47	HA0	0.70	35.0	100	EMVH630 □ RA470MHA0G
	47	JA0	0.50	25.0	170	EMVH630 □ RA470MJA0G
	100	KE0	0.25	12.5	500	EMVH630 □ RA101MKE0S
	220	KG5	0.20	10.0	600	EMVH630 □ RA221MKG5S
	330	LH0	0.18	9.0	820	EMVH630 □ RA331MLH0S
	470	LN0	0.11	5.5	1,100	EMVH630 □ RA471MLN0S
※1 80	10	HA0	0.75	50.0	70	EMVH800 □ RA100MHA0G
	22	HA0	0.75	50.0	70	EMVH800 □ RA220MHA0G
	22	JA0	0.55	35.0	115	EMVH800 □ RA220MJA0G
	33	HA0	0.75	50.0	70	EMVH800 □ RA330MHA0G
	33	JA0	0.55	35.0	115	EMVH800 □ RA330MJA0G
	47	JA0	0.55	35.0	115	EMVH800 □ RA470MJA0G
※1 100	10	HA0	0.75	50.0	70	EMVH101 □ RA100MHA0G
	22	HA0	0.75	50.0	70	EMVH101 □ RA220MHA0G
	22	JA0	0.55	35.0	115	EMVH101 □ RA220MJA0G
	33	JA0	0.55	35.0	115	EMVH101 □ RA330MJA0G
	47	KE0	0.33	16.5	450	EMVH101 □ RA470MKE0S
	68	KG5	0.26	13.0	550	EMVH101 □ RA680MKG5S
	100	LH0	0.24	12.0	650	EMVH101 □ RA101MLH0S
	220	MN0	0.16	8.0	950	EMVH101 □ RA221MMN0S

□ : Enter the appropriate terminal code.
Production of the products shown in [ ] is scheduled to be discontinued.
*1: Assembly boards with the designated products attached cannot be cleaned.

◆RATED RIPPLE CURRENT MULTIPLIERS

❶Frequency Multipliers

Size code	Capacitance(μF) \ Frequency(Hz)	120	1k	10k	100k
F60 to JA0	10	0.66	0.86	0.93	1.00
	22 to 470	0.93	0.97	1.00	1.00
KE0 to MN0	47 to 100	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
	2,200 to 3,300	0.75	0.90	0.95	1.00
	4,700	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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Chemi-Con:

EMVH630GTR471MLN0S EMVH630BTR471MLN0S EMVH630GTR721MMN0S EMVH350GTR681MMH0S
EMVH101ADA330MJA0G EMVH201GTR470MMN0S EMVH350GTR331MLH0S EMVH250ADA331MJA0G
EMVH101GTR221MMNOS EMVH250ADA330MF60G EMVH350ADA470MHA0G EMVH350ARA331MKD5G
EMVH500ADA470MJA0G EMVH630ADA100MF80G EMVH100GDA222MMH0S EMVH100GDA472MMN0S
EMVH500GDA471MMH0S EMVH250ADA470MF80G EMVH101GDA101MLH0S EMVH101ADA100MHA0G
EMVH451GDA100MMN0S EMVH401GDA100MLN0S EMVH500GDA221MLH0S EMVH401GDA100MMH0S
EMVH101ADA220MJA0G EMVH161GDA220MLH0S EMVH201GDA220MLH0S EMVH251GDA220MLN0S
EMVH630ADA100MH63G EMVH160GDA681MLH0S EMVH250GDA681MMH0S EMVH350GDA331MLH0S
EMVH500GDA331MLH0S EMVH201GDA470MMN0S EMVH100GDA332MMH0S EMVH500ADA330MHA0G
EMVH451GDA4R7MLH0S EMVH201GDA330MMH0S EMVH350ADA101MJA0G EMVH250ADA101MHA0G
EMVH350ADA100MF60G EMVH250GDA102MMN0S EMVH350ADA330MH63G EMVH100ADA221MHA0G
EMVH100GDA222MLH0S EMVH500ADA220MF80G EMVH251GDA220MMH0S EMVH160GDA102MMH0S
EMVH350ADA330MF80G EMVH630GDA471MLN0S EMVH401GDA6R8MLH0S EMVH350ADA220MF60G
EMVH250ADA221MJA0G EMVH161GDA680MMN0S EMVH101GDA221MMN0S EMVH630GDA331MLH0S
EMVH630ADA330MJA0G EMVH250ADA470MH63G EMVH630ADA220MHA0G EMVH100ADA101MH63G
EMVH500ADA100MF60G EMVH201GDA330MLN0S EMVH251GDA330MMN0S EMVH161GDA330MMH0S
EMVH160ADA470MF60G EMVH250GDA471MLH0S EMVH350GDA471MLH0S EMVH350GDA681MMH0S
EMVH250GDA681MLH0S EMVH160GDA222MMH0S EMVH500ADA220MH63G EMVH500BTR471MMH0S
EMVH630GTR331MLH0S EMVH250ADA221MHA0G EMVH800ADA470MJA0G EMVH100ADA221MHA0N
EMVH500GTR471MMH0S EMVH630ADA470MHA0G EMVH350ADA101MHA0G EMVH630ADA470MJA0G
EMVH250ADA101MF80G EMVH161ATR680MMN0S EMVH160ADA101MHA0G EMVH500ADA330MF80G
EMVH101GDA330MJA0G EMVH101ATR101MLH0S EMVH500GRA221MKE0S EMVH500ADA470MHA0G
EMVH500ATR331MKG5S EMVH100ADA101MF80G EMVH350ADA221MJA0G EMVH100ADA331MJA0G
EMVH401GRA100MLN0S EMVH201GRA470MMN0S EMVH101GRA221MMN0S EMVH500ADA101MJA0G
EMVH350ARA221MJA0G EMVH500ARA470MHA0G EMVH160ARA331MJA0G EMVH250ARA101MHA0G