

**Alchip™ - MVH Series**

- Lower ESR, Higher ripple current
- Endurance : 1,000 to 5,000 hours at 125°C
- Suitable to fit for automotive equipment
- Solvent resistant type (10 to 50V)
- RoHS Compliant

**MVH**

↑ 125°C  
Expanded case sizes  
MVK

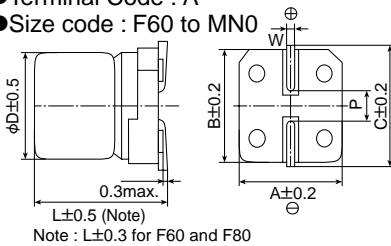


◆ **SPECIFICATIONS**

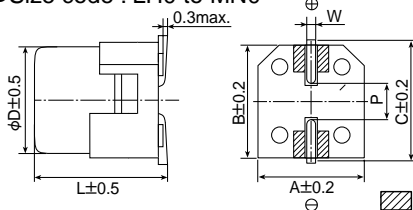
Items	Characteristics													
<b>Category Temperature Range</b>	-40 to +125°C													
<b>Rated Voltage Range</b>	10 to 450V <sub>dc</sub>													
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)													
<b>Leakage Current</b>	Rated voltage (V <sub>dc</sub> )	10 to 100V <sub>dc</sub>						160 to 450V <sub>dc</sub>						
	F60 to JA0	I=0.01CV or 3μA, whichever is greater.						I=0.04CV+100						
	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°C after 2 minutes)														
<b>Dissipation Factor (tanδ)</b>	Rated voltage (V <sub>dc</sub> )	10V	16V	25V	35V	50V	63V	80V	100V	160 to 250V	400 & 450V			
	tanδ (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	0.20	0.24		
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> )	10V	16V	25V	35V	50V	63V	80V	100V	160 to 250V	400 & 450V			
	F60 to JA0	Z(-25°C)/Z(+20°C)	3	2	2	2	2	2	2	2	—	—		
		Z(-40°C)/Z(+20°C)	6	4	4	3	3	3	3	3	—	—		
	KE0 to MN0	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	—	2	3	6		
		Z(-40°C)/Z(+20°C)	8	6	4	3	3	3	—	3	6	10	(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	F60 to H63 (10 to 100V <sub>dc</sub> ) : 1,000hours HA0 to JA0 (10 to 100V <sub>dc</sub> ) : 2,000hours KE0 to MN0 (10 to 100V <sub>dc</sub> ) : 5,000hours KE0 to MN0 (160 to 450V <sub>dc</sub> ) : 2,000hours													
Capacitance change	≤±30% of the initial value													
D.F. (tanδ)	≤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 (500 hours for 400 to 450V <sub>dc</sub> ) 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.														
Rated voltage(V <sub>dc</sub> )	10 to 50V <sub>dc</sub>						63 to 450V <sub>dc</sub>							
Capacitance change	≤±30% of the initial value						≤±30% of the initial value							
D.F. (tanδ)	≤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



- Terminal Code : G
- Size code : LH0 to MN0



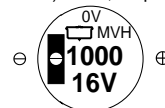
Size code	D	L	A	B	C	W	P
<b>F60</b>	6.3	5.7	6.6	6.6	7.2	0.5 to 0.8	1.9
<b>F80</b>	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
<b>H63</b>	8	6.3	8.3	8.3	9.0	0.5 to 0.8	2.3
<b>HA0</b>	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
<b>JA0</b>	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5
<b>KE0</b>	12.5	13.5	13.0	13.0	13.7	1.0 to 1.3	4.2
<b>KG5</b>	12.5	16.0	13.0	13.0	13.7	1.0 to 1.3	4.2
<b>LH0</b>	16	16.5	17.0	17.0	18.0	1.0 to 1.3	6.5
<b>LN0</b>	16	21.5	17.0	17.0	18.0	1.0 to 1.3	6.5
<b>MH0</b>	18	16.5	19.0	19.0	20.0	1.0 to 1.3	6.5
<b>MN0</b>	18	21.5	19.0	19.0	20.0	1.0 to 1.3	6.5

◆ **MARKING**

**F60 to JA0**  
EX) 35V47μF



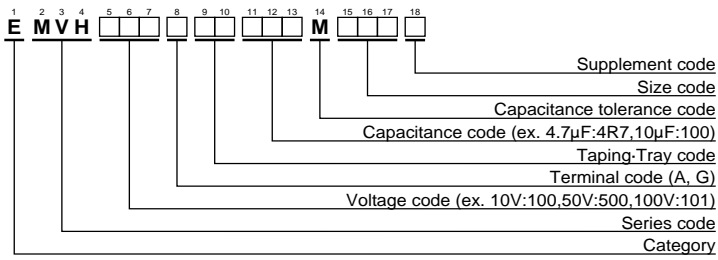
**KE0 to MN0**  
EX) 16V1,000μF





## Alchip™-MVH Series

### ◆PART NUMBERING SYSTEM



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

### ◆STANDARD RATINGS

□ is not solvent resistant (63 to 450V<sub>dc</sub>).

VV (V <sub>dc</sub> )	Cap (μF)	Size code	ESR (Ω <sub>max</sub> /100kHz)		Rated ripple current (mArms/125°C)		Part No.		
			20°C	-40°C	100kHz	120Hz			
10	100	F80	0.90	14.0	110	—	EMVH100ADA101MF80G		
	100	H63	0.90	14.0	110	—	EMVH100ADA101MH63G		
	220	F80	0.90	14.0	110	—	EMVH100ADA221MF80G		
	220	H63	0.90	14.0	110	—	EMVH100ADA221MH63G		
	220	HA0	0.40	6.0	220	—	EMVH100ADA221MHA0G		
	330	HA0	0.40	6.0	220	—	EMVH100ADA331MHA0G		
	330	JA0	0.30	4.5	296	—	EMVH100ADA331MJA0G		
	470	JA0	0.30	4.5	296	—	EMVH100ADA471MJA0G		
	1,000	KE0	0.14	2.1	750	—	EMVH100ARA102MKE0S		
	2,200	LH0	0.10	1.5	1,000	—	EMVH100DA222MLH0S		
	2,200	MH0	0.10	1.5	1,200	—	EMVH100DA222MMH0S		
	3,300	MH0	0.10	1.5	1,200	—	EMVH100DA332MMH0S		
	4,700	MN0	0.058	0.87	1,550	—	EMVH100DA472MMN0S		
	16	47	F60	1.6	24.0	69	—	EMVH160ADA470MF60G	
100		HA0	0.40	6.0	220	—	EMVH160ADA101MHA0G		
220		HA0	0.40	6.0	220	—	EMVH160ADA221MHA0G		
220		JA0	0.30	4.5	296	—	EMVH160ADA221MJA0G		
330		JA0	0.30	4.5	296	—	EMVH160ADA331MJA0G		
470		KE0	0.14	2.1	750	—	EMVH160ARA471MKE0S		
680		KE0	0.14	2.1	750	—	EMVH160ARA681MKE0S		
680		LH0	0.10	1.5	1,000	—	EMVH160DA681MLH0S		
1,000		MH0	0.10	1.5	1,200	—	EMVH160DA102MMH0S		
2,200		MH0	0.10	1.5	1,200	—	EMVH160DA222MMH0S		
25	33	F60	1.6	24.0	69	—	EMVH250ADA330MF60G		
	47	F80	0.90	14.0	110	—	EMVH250ADA470MF80G		
	47	H63	0.90	14.0	110	—	EMVH250ADA470MH63G		
	100	F80	0.90	14.0	110	—	EMVH250ADA101MF80G		
	100	H63	0.90	14.0	110	—	EMVH250ADA101MH63G		
	100	HA0	0.40	6.0	220	—	EMVH250ADA101MHA0G		
	220	HA0	0.40	6.0	220	—	EMVH250ADA221MHA0G		
	220	JA0	0.30	4.5	296	—	EMVH250ADA221MJA0G		
	330	JA0	0.30	4.5	296	—	EMVH250ADA331MJA0G		
	330	KE0	0.14	2.1	750	—	EMVH250ARA331MKE0S		
	470	KE0	0.14	2.1	750	—	EMVH250ARA471MKE0S		
	470	LH0	0.10	1.5	1,000	—	EMVH250DA471MLH0S		
	680	LH0	0.10	1.5	1,000	—	EMVH250DA681MLH0S		
	680	MH0	0.10	1.5	1,200	—	EMVH250DA681MMH0S		
1,000	MN0	0.058	0.87	1,550	—	EMVH250DA102MMN0S			
35	10	F60	1.6	24.0	69	—	EMVH350ADA100MF60G		
	22	F60	1.6	24.0	69	—	EMVH350ADA220MF60G		
	33	F80	0.90	14.0	110	—	EMVH350ADA330MF80G		
	33	H63	0.90	14.0	110	—	EMVH350ADA330MH63G		
	47	F80	0.90	14.0	110	—	EMVH350ADA470MF80G		
	47	H63	0.90	14.0	110	—	EMVH350ADA470MH63G		
	47	HA0	0.40	6.0	220	—	EMVH350ADA470MHA0G		
	100	HA0	0.40	6.0	220	—	EMVH350ADA101MHA0G		
	100	JA0	0.30	4.5	296	—	EMVH350ADA101MJA0G		
	220	JA0	0.30	4.5	296	—	EMVH350ADA221MJA0G		
	330	KE0	0.14	2.1	750	—	EMVH350ARA331MKE0S		
	330	LH0	0.10	1.5	1,000	—	EMVH350DA331MLH0S		
	470	KG5	0.11	1.5	900	—	EMVH350ARA471MKG5S		
	470	LH0	0.10	1.5	1,000	—	EMVH350DA471MLH0S		
680	MH0	0.10	1.5	1,200	—	EMVH350DA681MMH0S			
50	10	F60	2.8	42.0	51	—	EMVH500ADA100MF60G		
	10	H63	1.6	30.0	83	—	EMVH500ADA100MH63G		
	22	F80	2.0	30.0	83	—	EMVH500ADA220MF80G		
	22	H63	1.6	30.0	83	—	EMVH500ADA220MH63G		
	50	33	F80	2.0	30.0	83	—	EMVH500ADA330MF80G	
		33	H63	1.6	30.0	83	—	EMVH500ADA330MH63G	
		33	HA0	0.70	11.0	160	—	EMVH500ADA330MHA0G	
		47	HA0	0.70	11.0	160	—	EMVH500ADA470MHA0G	
		47	JA0	0.50	7.5	247	—	EMVH500ADA470MJA0G	
		100	JA0	0.50	7.5	247	—	EMVH500ADA101MJA0G	
		100	KE0	0.23	3.5	550	—	EMVH500ARA101MKE0S	
		220	KE0	0.23	3.5	550	—	EMVH500ARA221MKE0S	
		220	LH0	0.15	2.3	850	—	EMVH500DA221MLH0S	
		330	KG5	0.18	2.7	700	—	EMVH500ARA331MKG5S	
330		LH0	0.15	2.3	850	—	EMVH500DA331MLH0S		
470		MH0	0.15	2.3	920	—	EMVH500DA471MMH0S		
63		10	F80	2.0	100	60	—	EMVH630ADA100MF80G	
		10	H63	2.0	110	60	—	EMVH630ADA100MH63G	
	22	HA0	0.70	35.0	100	—	EMVH630ADA220MHA0G		
	33	HA0	0.70	35.0	100	—	EMVH630ADA330MHA0G		
	33	JA0	0.50	25.0	170	—	EMVH630ADA330MJA0G		
	47	HA0	0.70	35.0	100	—	EMVH630ADA470MHA0G		
	47	JA0	0.50	25.0	170	—	EMVH630ADA470MJA0G		
	100	KE0	0.25	12.5	500	—	EMVH630ARA101MKE0S		
	220	KG5	0.20	10.0	600	—	EMVH630ARA221MKG5S		
	330	LH0	0.18	9.0	820	—	EMVH630DA331MLH0S		
	470	LN0	0.11	5.5	1,100	—	EMVH630DA471MLN0S		
	80	10	HA0	0.75	50.0	70	—	EMVH800ADA100MHA0G	
		22	HA0	0.75	50.0	70	—	EMVH800ADA220MHA0G	
		22	JA0	0.55	35.0	115	—	EMVH800ADA220MJA0G	
33		HA0	0.75	50.0	70	—	EMVH800ADA330MHA0G		
33		JA0	0.55	35.0	115	—	EMVH800ADA330MJA0G		
47		JA0	0.55	35.0	115	—	EMVH800ADA470MJA0G		
100		10	HA0	0.75	50.0	70	—	EMVH101ADA100MHA0G	
		22	HA0	0.75	50.0	70	—	EMVH101ADA220MHA0G	
		22	JA0	0.55	35.0	115	—	EMVH101ADA220MJA0G	
		33	JA0	0.55	35.0	115	—	EMVH101ADA330MJA0G	
		47	KE0	0.33	16.5	450	—	EMVH101ARA470MKE0S	
		68	KG5	0.26	13.0	550	—	EMVH101ARA680MKG5S	
		100	LH0	0.24	12.0	650	—	EMVH101DA101MLH0S	
		220	MN0	0.16	8.0	950	—	EMVH101DA221MMN0S	
	160	10	KE0	—	—	100	—	EMVH161ARA100MKE0S	
		22	LH0	—	—	180	—	EMVH161DA220MLH0S	
		33	MH0	—	—	245	—	EMVH161DA330MMH0S	
		68	MN0	—	—	380	—	EMVH161DA680MMN0S	
		200	10	KE0	—	—	100	—	EMVH201ARA100MKE0S
			22	LH0	—	—	180	—	EMVH201DA220MLH0S
33			LN0	—	—	250	—	EMVH201DA330MLN0S	
33			MH0	—	—	245	—	EMVH201DA330MMH0S	
47			MN0	—	—	315	—	EMVH201DA470MMN0S	
250			10	KG5	—	—	110	—	EMVH251ARA100MKG5S
			22	LN0	—	—	200	—	EMVH251DA220MLN0S
			22	MH0	—	—	205	—	EMVH251DA220MMH0S
			33	MN0	—	—	260	—	EMVH251DA330MMN0S
			400	4.7	KE0	—	—	70	—
	6.8			LH0	—	—	100	—	EMVH401DA6R8MLH0S
	10			LN0	—	—	140	—	EMVH401DA100MLN0S
	10			MH0	—	—	135	—	EMVH401DA100MMH0S
	450			3.3	KG5	—	—	65	—
		4.7		LH0	—	—	85	—	EMVH451DA4R7MLH0S
		10		MN0	—	—	145	—	EMVH451DA100MMN0S

□ : Enter the appropriate terminal code.