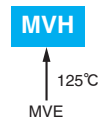


Alchip™-MVH Series

- 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

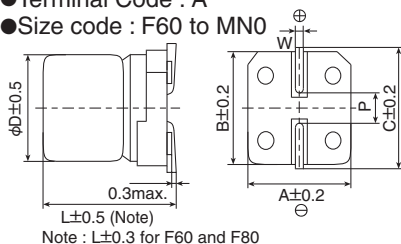


◆ SPECIFICATIONS

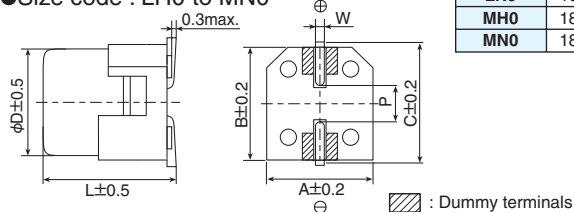
Items	Characteristics													
Category Temperature Range	-40 to +125°C													
Rated Voltage Range	10 to 450V _{dc}													
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)													
Leakage Current	Rated voltage (V _{dc})	10 to 100V _{dc}						160 to 450V _{dc}						
	F60 to JA0	I=0.01CV 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°C after 2 minutes)														
Dissipation Factor (tanδ)	Rated voltage (V _{dc})	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)														
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	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)		
Endurance	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 _{dc}) : 1,000hours HA0 to JA0 (10 to 100V _{dc}) : 2,000hours KE0 to MN0 (10 to 100V _{dc}) : 5,000hours KE0 to MN0 (160 to 450V _{dc}) : 2,000hours												
	Capacitance change	≤ ±30% of the initial value												
	D.F. (tanδ)	≤ 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°C after exposing them for 1,000 hours (500 hours for 400 to 450V _{dc}) 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 _{dc})	10 to 50V _{dc}						63 to 450V _{dc}						
	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

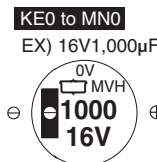
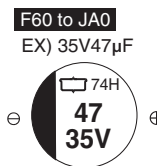


- Terminal Code : G
- Size code : LH0 to MN0



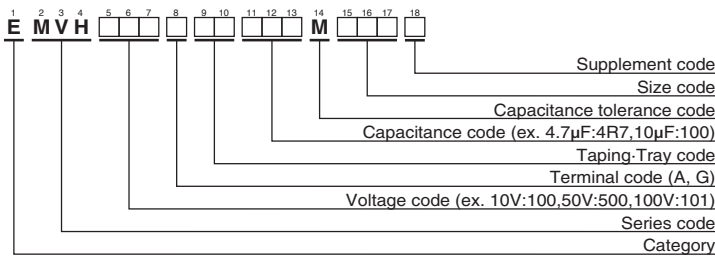
Size code	D	L	A	B	C	W	P
F60	6.3	5.7	6.6	6.6	7.2	0.5 to 0.8	1.9
F80	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
H63	8	6.3	8.3	8.3	9.0	0.5 to 0.8	2.3
HA0	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
JA0	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5
KE0	12.5	13.5	13.0	13.0	13.7	1.0 to 1.3	4.2
KG5	12.5	16.0	13.0	13.0	13.7	1.0 to 1.3	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

◆ MARKING



Alchip™-MVH Series

◆ PART NUMBERING SYSTEM



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

◆ STANDARD RATINGS

□ is not solvent resistant (63 to 450V_{dc}).

WV (Vdc)	Cap (μF)	Size code	ESR (Ω max/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	—	EMVH100□DA222MLH0S	
	2,200	MH0	0.10	1.5	1,200	—	EMVH100□DA222MMH0S	
	3,300	MH0	0.10	1.5	1,200	—	EMVH100□DA332MMH0S	
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	—	EMVH160□DA681MLH0S	
	1,000	MH0	0.10	1.5	1,200	—	EMVH160□DA102MMH0S	
	2,200	MH0	0.10	1.5	1,200	—	EMVH160□DA222MMH0S	
	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	—	EMVH250□DA471MLH0S	
680	LH0	0.10	1.5	1,000	—	EMVH250□DA681MLH0S		
680	MH0	0.10	1.5	1,200	—	EMVH250□DA681MMH0S		
1,000	MN0	0.058	0.87	1,550	—	EMVH250□DA102MMN0S		
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	—	EMVH350□DA331MLH0S	
470	KG5	0.11	1.5	900	—	EMVH350ARA471MKG5S		
470	LH0	0.10	1.5	1,000	—	EMVH350□DA471MLH0S		
680	MH0	0.10	1.5	1,200	—	EMVH350□DA681MMH0S		
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	0.90	14.0	110	—	EMVH500ADA330MF80G
		33	H63	0.90	14.0	110	—	EMVH500ADA330MH63G
		47	F80	0.90	14.0	110	—	EMVH500ADA470MF80G
		47	H63	0.90	14.0	110	—	EMVH500ADA470MH63G
		47	HA0	0.40	6.0	220	—	EMVH500ADA470MHA0G
		100	HA0	0.40	6.0	220	—	EMVH500ADA101MHA0G
		100	JA0	0.30	4.5	296	—	EMVH500ADA101MJA0G
		220	JA0	0.30	4.5	296	—	EMVH500ADA221MJA0G
330		KE0	0.14	2.1	750	—	EMVH500ARA331MKE0S	
330		LH0	0.10	1.5	1,000	—	EMVH500□DA331MLH0S	
470		KG5	0.11	1.5	900	—	EMVH500ARA471MKG5S	
470		LH0	0.10	1.5	1,000	—	EMVH500□DA471MLH0S	
680	MH0	0.10	1.5	1,200	—	EMVH500□DA681MMH0S		
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	0.90	14.0	110	—	EMVH500ADA330MF80G
		33	H63	0.90	14.0	110	—	EMVH500ADA330MH63G
		47	F80	0.90	14.0	110	—	EMVH500ADA470MF80G
		47	H63	0.90	14.0	110	—	EMVH500ADA470MH63G
		47	HA0	0.40	6.0	220	—	EMVH500ADA470MHA0G
		100	HA0	0.40	6.0	220	—	EMVH500ADA101MHA0G
		100	JA0	0.30	4.5	296	—	EMVH500ADA101MJA0G
		220	JA0	0.30	4.5	296	—	EMVH500ADA221MJA0G
330		KE0	0.14	2.1	750	—	EMVH500ARA331MKE0S	
330		LH0	0.10	1.5	1,000	—	EMVH500□DA331MLH0S	
470		KG5	0.11	1.5	900	—	EMVH500ARA471MKG5S	
470		LH0	0.10	1.5	1,000	—	EMVH500□DA471MLH0S	
680	MH0	0.10	1.5	1,200	—	EMVH500□DA681MMH0S		
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	0.90	14.0	110	—	EMVH500ADA330MF80G
		33	H63	0.90	14.0	110	—	EMVH500ADA330MH63G
		47	F80	0.90	14.0	110	—	EMVH500ADA470MF80G
		47	H63	0.90	14.0	110	—	EMVH500ADA470MH63G
		47	HA0	0.40	6.0	220	—	EMVH500ADA470MHA0G
		100	HA0	0.40	6.0	220	—	EMVH500ADA101MHA0G
		100	JA0	0.30	4.5	296	—	EMVH500ADA101MJA0G
		220	JA0	0.30	4.5	296	—	EMVH500ADA221MJA0G
330		KE0	0.14	2.1	750	—	EMVH500ARA331MKE0S	
330		LH0	0.10	1.5	1,000	—	EMVH500□DA331MLH0S	
470		KG5	0.11	1.5	900	—	EMVH500ARA471MKG5S	
470		LH0	0.10	1.5	1,000	—	EMVH500□DA471MLH0S	
680	MH0	0.10	1.5	1,200	—	EMVH500□DA681MMH0S		
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	0.90	14.0	110	—	EMVH500ADA330MF80G
		33	H63	0.90	14.0	110	—	EMVH500ADA330MH63G
		47	F80	0.90	14.0	110	—	EMVH500ADA470MF80G
		47	H63	0.90	14.0	110	—	EMVH500ADA470MH63G
		47	HA0	0.40	6.0	220	—	EMVH500ADA470MHA0G
		100	HA0	0.40	6.0	220	—	EMVH500ADA101MHA0G
		100	JA0	0.30	4.5	296	—	EMVH500ADA101MJA0G
		220	JA0	0.30	4.5	296	—	EMVH500ADA221MJA0G
330		KE0	0.14	2.1	750	—	EMVH500ARA331MKE0S	
330		LH0	0.10	1.5	1,000	—	EMVH500□DA331MLH0S	
470		KG5	0.11	1.5	900	—	EMVH500ARA471MKG5S	
470		LH0	0.10	1.5	1,000	—	EMVH500□DA471MLH0S	
680	MH0	0.10	1.5	1,200	—	EMVH500□DA681MMH0S		
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	0.90	14.0	110	—	EMVH500ADA330MF80G
		33	H63	0.90	14.0	110	—	EMVH500ADA330MH63G
		47	F80	0.90	14.0	110	—	EMVH500ADA470MF80G
		47	H63	0.90	14.0	110	—	EMVH500ADA470MH63G
		47	HA0	0.40	6.0	220	—	EMVH500ADA470MHA0G
		100	HA0	0.40	6.0	220	—	EMVH500ADA101MHA0G
		100	JA0	0.30	4.5	296	—	EMVH500ADA101MJA0G
		220	JA0	0.30	4.5	296	—	EMVH500ADA221MJA0G
330		KE0	0.14	2.1	750	—	EMVH500ARA331MKE0S	
330		LH0	0.10	1.5	1,000	—	EMVH500□DA331MLH0S	
470		KG5	0.11	1.5	900	—	EMVH500ARA471MKG5S	
470		LH0	0.10	1.5	1,000	—	EMVH500□DA471MLH0S	
680	MH0	0.10	1.5	1,200	—	EMVH500□DA681MMH0S		
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	0.90	14.0	110	—	EMVH500ADA330MF80G
		33	H63	0.90	14.0	110	—	EMVH500ADA330MH63G
		47	F8					