

**Alchip™-MVY Series** *Upgrade!*

- Endurance : 1,000 to 5,000 hours at 105°C
- Low impedance
- For digital equipment, especially DC-DC converters
- Solvent resistant type except 80 & 100V<sub>dc</sub> (see PRECAUTIONS AND GUIDELINES)
- Vibration resistant structure
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.



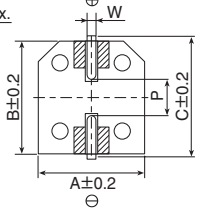
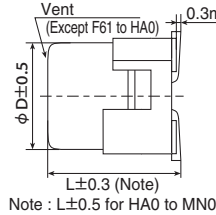
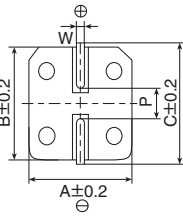
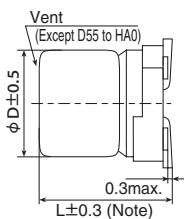
**SPECIFICATIONS**

Items	Characteristics											
<b>Category</b>	-55 to +105°C (6.3 to 63V <sub>dc</sub> )    -40 to +105°C (80 & 100V <sub>dc</sub> )											
<b>Temperature Range</b>												
<b>Rated Voltage Range</b>	6.3 to 100V <sub>dc</sub>											
<b>Capacitance Tolerance</b>	±20% (M) <span style="float:right">(at 20°C, 120Hz)</span>											
<b>Leakage Current</b>	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) <span style="float:right">(at 20°C after 2 minutes)</span>											
<b>Dissipation Factor (tan δ)</b>	Rated voltage (V <sub>dc</sub> )	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. <span style="float:right">(at 20°C, 120Hz)</span>	
	tan δ (Max.)	D55 to F80	0.24	0.20	0.16	0.14	0.12	0.12	—	—		—
		HA0 & JA0	0.28	0.24	0.20	0.16	0.14	0.12	—	—		—
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Rated voltage (V <sub>dc</sub> )	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	<span style="float:right">(at 120Hz)</span>	
	Z(-40°C)/Z(+20°C)	D55 to JA0	3	2	2	2	2	2	—	—		—
		KE0 to MN0	10	8	6	4	3	3	3	3		3
<b>Endurance</b>	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for specified time at 105°C.											
	Time	D55 to F80 : 1,000 hours HA0 & JA0 : 2,000 hours KE0 to MN0 : 5,000 hours										
	Rated voltage	6.3V <sub>dc</sub> (D55 to JA0)					6.3 to 100V <sub>dc</sub>					
	Capacitance change	≤ ±30% of the initial value					≤ ±20% of the initial value					
	D.F. (tan δ)	≤300% of the initial specified value					≤200% of the initial specified value					
	Leakage current	≤The initial specified value					≤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 105°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	6.3V <sub>dc</sub> (D55 to JA0)					6.3 to 100V <sub>dc</sub>					
	Capacitance change	≤ ±30% of the initial value					≤ ±20% of the initial value					
	D.F. (tan δ)	≤300% of the initial specified value					≤200% of the initial specified value					
	Leakage current	≤The initial specified value					≤The initial specified value					

**DIMENSIONS [mm]**

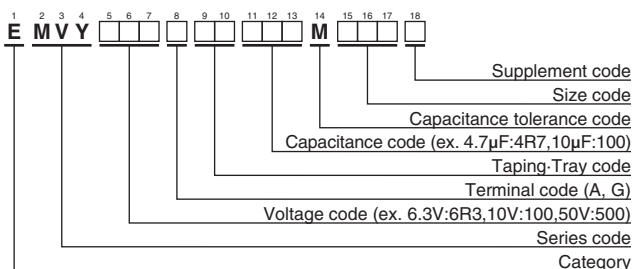
- Terminal Code : A
- Size code : D55 to MN0

- Terminal Code : G (Vibration resistant structure)
- Size code : F61 to MN0



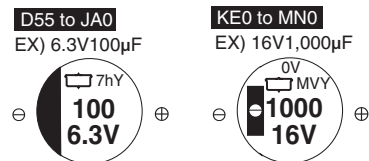
Size code	D	L	A	B	C	W	P
D55	4	5.2	4.3	4.3	5.1	0.5 to 0.8	1.0
E55	5	5.2	5.3	5.3	5.9	0.5 to 0.8	1.4
F55	6.3	5.2	6.6	6.6	7.2	0.5 to 0.8	1.9
F61	6.3	5.8	6.6	6.6	7.2	0.5 to 0.8	1.9
F80	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
HA0	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
JA0	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5
KE0	12.5	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

**PART NUMBERING SYSTEM**



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

**MARKING**



◆ **STANDARD RATINGS**

□ is not solvent resistant (80/100V<sub>dc</sub>).

WV (V <sub>dc</sub> )	Cap (μF)	Size code	Impedance (Ω max./20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz)	Part No.	WV (V <sub>dc</sub> )	Cap (μF)	Size code	Impedance (Ω max./20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz)	Part No.		
6.3	22	D55	3.0	60	EMVY6R3ARA220MD55G	25	330	HA0	0.30	450	EMVY250□RA331MHA0G		
	33	E55	1.8	95	EMVY6R3ARA330ME55G		470	JA0	0.15	670	EMVY250□RA471MJA0G		
	47	E55	1.8	95	EMVY6R3ARA470ME55G		1,000	LH0	0.054	1,260	EMVY250□RA102MLH0S		
	100	F55	1.0	140	EMVY6R3ARA101MF55G		1,000	MH0	0.054	1,350	EMVY250□RA102MMH0S		
	220	F55	1.0	140	EMVY6R3ARA221MF55G		2,200	LNO	0.038	1,630	EMVY250□RA222MLN0S		
	330	F80	0.34	280	EMVY6R3□RA331MF80G		2,200	MNO	0.038	1,750	EMVY250□RA222MMN0S		
	470	HA0	0.30	450	EMVY6R3□RA471MHA0G		3,300	MNO	0.038	1,750	EMVY250□RA332MMN0S		
	680	HA0	0.30	450	EMVY6R3□RA681MHA0G		35	4.7	D55	3.0	60	EMVY350ARA4R7MD55G	
	1,000	HA0	0.30	450	EMVY6R3□RA102MHA0G			10	E55	1.8	95	EMVY350ARA100ME55G	
	1,500	JA0	0.15	670	EMVY6R3□RA152MJA0G			22	F55	1.0	140	EMVY350ARA220MF55G	
	2,200	KE0	0.070	820	EMVY6R3□RA222MKE0S			33	F55	1.0	140	EMVY350ARA330MF55G	
	2,200	LH0	0.054	1,260	EMVY6R3□RA222MLH0S			47	F55	1.0	140	EMVY350ARA470MF55G	
	3,300	KG5	0.060	950	EMVY6R3□RA332MKG5S			47	F61	1.0	140	EMVY350□RA470MF61G	
	3,300	MH0	0.054	1,350	EMVY6R3□RA332MMH0S			68	F80	0.34	280	EMVY350□RA680MF80G	
	4,700	LNO	0.038	1,630	EMVY6R3□RA472MLN0S			100	HA0	0.30	450	EMVY350□RA101MHA0G	
	4,700	MH0	0.054	1,350	EMVY6R3□RA472MMH0S			220	HA0	0.30	450	EMVY350□RA221MHA0G	
	6,800	LNO	0.038	1,630	EMVY6R3□RA682MLN0S			330	JA0	0.15	670	EMVY350□RA331MJA0G	
	6,800	MNO	0.038	1,750	EMVY6R3□RA682MMN0S			470	KE0	0.070	820	EMVY350□RA471MKE0S	
8,200	MNO	0.038	1,750	EMVY6R3□RA822MMN0S	470	LH0		0.054	1,260	EMVY350□RA471MLH0S			
10	22	E55	1.8	95	EMVY100ARA220ME55G	1,000		LH0	0.054	1,260	EMVY350□RA102MLH0S		
	33	E55	1.8	95	EMVY100ARA330ME55G	1,000		MH0	0.054	1,350	EMVY350□RA102MMH0S		
	47	F55	1.0	140	EMVY100ARA470MF55G	2,200		MNO	0.038	1,750	EMVY350□RA222MMN0S		
	100	F55	1.0	140	EMVY100ARA101MF55G	50		1.0	D55	5.0	30	EMVY500ARA1R0MD55G	
	220	F80	0.34	280	EMVY100□RA221MF80G			2.2	D55	5.0	30	EMVY500ARA2R2MD55G	
	330	HA0	0.30	450	EMVY100□RA331MHA0G			3.3	D55	5.0	30	EMVY500ARA3R3MD55G	
	470	HA0	0.30	450	EMVY100□RA471MHA0G		4.7	E55	3.0	50	EMVY500ARA4R7ME55G		
	680	JA0	0.15	670	EMVY100□RA681MJA0G		10	F55	2.0	70	EMVY500ARA100MF55G		
	1,000	JA0	0.15	670	EMVY100□RA102MJA0G		22	F55	2.0	70	EMVY500ARA220MF55G		
	2,200	KG5	0.060	950	EMVY100□RA222MKG5S		33	F80	0.60	170	EMVY500□RA330MF80G		
	2,200	LH0	0.054	1,260	EMVY100□RA222MLH0S		47	F80	0.60	170	EMVY500□RA470MF80G		
	3,300	LH0	0.054	1,260	EMVY100□RA332MLH0S		68	HA0	0.60	300	EMVY500□RA680MHA0G		
	3,300	MH0	0.054	1,350	EMVY100□RA332MMH0S		100	HA0	0.60	300	EMVY500□RA101MHA0G		
	4,700	LNO	0.038	1,630	EMVY100□RA472MLN0S		220	JA0	0.30	500	EMVY500□RA221MJA0G		
	4,700	MNO	0.038	1,750	EMVY100□RA472MMN0S		330	KE0	0.11	650	EMVY500□RA331MKE0S		
	6,800	MNO	0.038	1,750	EMVY100□RA682MMN0S		330	LH0	0.087	900	EMVY500□RA331MLH0S		
	16	10	D55	3.0	60		EMVY160ARA100MD55G	470	LH0	0.087	900	EMVY500□RA471MLH0S	
		22	E55	1.8	95		EMVY160ARA220ME55G	470	MH0	0.087	1,060	EMVY500□RA471MMH0S	
33		F55	1.0	140	EMVY160ARA330MF55G		1,000	MNO	0.050	1,520	EMVY500□RA102MMN0S		
47		F55	1.0	140	EMVY160ARA470MF55G		63	68	KE0	0.19	500	EMVY630□RA680MKE0S	
100		F55	1.0	140	EMVY160ARA101MF55G			100	KE0	0.19	500	EMVY630□RA101MKE0S	
220		F80	0.34	280	EMVY160□RA221MF80G	220		KE0	0.19	500	EMVY630□RA221MKE0S		
330		HA0	0.30	450	EMVY160□RA331MHA0G	220		LH0	0.12	845	EMVY630□RA221MLH0S		
470		HA0	0.30	450	EMVY160□RA471MHA0G	330		LH0	0.12	845	EMVY630□RA331MLH0S		
680		JA0	0.15	670	EMVY160□RA681MJA0G	330		MH0	0.12	905	EMVY630□RA331MMH0S		
1,000		KE0	0.070	820	EMVY160□RA102MKE0S	470		LNO	0.085	1,100	EMVY630□RA471MLN0S		
1,000		LH0	0.054	1,260	EMVY160□RA102MLH0S	470		MH0	0.12	905	EMVY630□RA471MMH0S		
2,200		LH0	0.054	1,260	EMVY160□RA222MLH0S	80		100	KE0	0.33	450	EMVY800□RA101MKE0S	
2,200		MH0	0.054	1,350	EMVY160□RA222MMH0S			220	KG5	0.26	550	EMVY800□RA221MKG5S	
3,300		LNO	0.038	1,630	EMVY160□RA332MLN0S			330	LNO	0.16	900	EMVY800□RA331MLN0S	
3,300		MH0	0.054	1,350	EMVY160□RA332MMH0S			330	MH0	0.24	700	EMVY800□RA331MMH0S	
4,700		MNO	0.038	1,750	EMVY160□RA472MMN0S			470	MNO	0.16	950	EMVY800□RA471MMN0S	
25		10	E55	1.8	95			EMVY250ARA100ME55G	100	47	KE0	0.33	450
		22	F55	1.0	140	EMVY250ARA220MF55G		68		KE0	0.33	450	EMVY101□RA680MKE0S
	33	F55	1.0	140	EMVY250ARA330MF55G	100		KE0		0.33	450	EMVY101□RA101MKE0S	
	47	F55	1.0	140	EMVY250ARA470MF55G	100		LH0		0.24	650	EMVY101□RA101MLH0S	
	100	F80	0.34	280	EMVY250□RA101MF80G	220		LNO		0.16	900	EMVY101□RA221MLN0S	
	220	HA0	0.30	450	EMVY250□RA221MHA0G	220	MH0	0.24		700	EMVY101□RA221MMH0S		
						330	MNO	0.16		950	EMVY101□RA331MMN0S		

□ : Enter the appropriate terminal code.

◆ **RATED RIPPLE CURRENT MULTIPLIERS**

● Frequency Multipliers

Size code	Capacitance(μF)	Frequency(Hz)			
		120	1k	10k	100k
D55 to JA0	1.0 to 4.7	0.35	0.70	0.90	1.00
	10 to 100	0.40	0.75	0.90	1.00
	220 to 470	0.50	0.85	0.94	1.00
	680 to 1,500	0.60	0.87	0.95	1.00
KE0 to MNO	47 to 100	0.40	0.75	0.90	1.00
	220 to 470	0.50	0.85	0.94	1.00
	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 to 8,200	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.