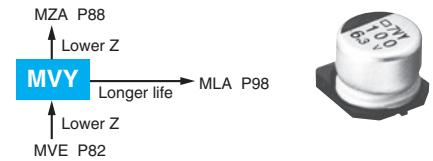


Alchip™-MVY Series

- 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_{dc} (see PRECAUTIONS AND GUIDELINES)
- Vibration resistant structure
- RoHS Compliant



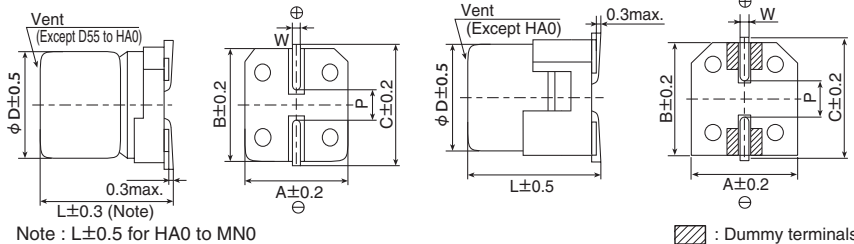
◆SPECIFICATIONS

Items	Characteristics										
Category Temperature Range	-55 to +105°C (6.3 to 63V _{dc}) -40 to +105°C (80 & 100V _{dc})										
Rated Voltage Range	6.3 to 100V _{dc}										
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)										
Leakage Current	I=0.01CV or 3μA, 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 (tan δ)	Rated voltage (V _{dc})	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. (at 20°C, 120Hz)
	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	—	—	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	(at 120Hz)
	Z(-40°C)/Z(+20°C)	D55 to JA0	3	2	2	2	2	2	—	—	
		KE0 to MNO	10	8	6	4	3	3	3	3	
Endurance	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 MNO : 5,000 hours									
	Rated voltage	6.3V _{dc} (D55 to JA0)					6.3 to 100V _{dc}				
	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				
	Shelf Life	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 _{dc} (D55 to JA0)					6.3 to 100V _{dc}				
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]

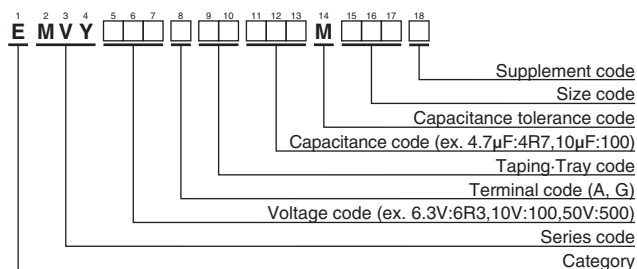
- Terminal Code : A
- Size code : D55 to MNO

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



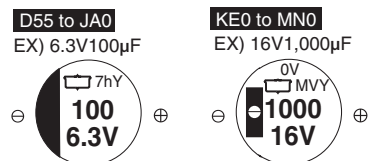
Size code	D	L	A	B	C	W	P
D55	4	5.2	4.3	4.3	5.1	0.5 to 0.8	1.0
E55	5	5.2	5.3	5.3	5.9	0.5 to 0.8	1.4
F55	6.3	5.2	6.6	6.6	7.2	0.5 to 0.8	1.9
F61	6.3	5.8	6.6	6.6	7.2	0.5 to 0.8	1.9
F80	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
HA0	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
JA0	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5
KE0	12.5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

WV (V _{dc})	Cap (µF)	Size code	Impedance (Ω max./20°C, 100kHz)	Rated ripple current (mA _{rms} /105°C, 100kHz)	Part No.	WV (V _{dc})	Cap (µF)	Size code	Impedance (Ω max./20°C, 100kHz)	Rated ripple current (mA _{rms} /105°C, 100kHz)	Part No.		
6.3	22	D55	3.0	60	EMVY6R3ADA220MD55G	25	330	HA0	0.30	450	EMVY250□DA331MHA0G		
	33	E55	1.8	95	EMVY6R3ADA330ME55G		470	JA0	0.15	670	EMVY250□DA471MJA0G		
	47	E55	1.8	95	EMVY6R3ADA470ME55G		1,000	LH0	0.054	1,260	EMVY250□DA102MLH0S		
	100	F55	1.0	140	EMVY6R3ADA101MF55G		1,000	MH0	0.054	1,350	EMVY250□DA102MMH0S		
	220	F55	1.0	140	EMVY6R3ADA221MF55G		2,200	LN0	0.038	1,630	EMVY250□DA222MLN0S		
	330	F80	0.34	280	EMVY6R3ADA331MF80G		2,200	MN0	0.038	1,750	EMVY250□DA222MMN0S		
	470	HA0	0.30	450	EMVY6R3□DA471MHA0G		3,300	MN0	0.038	1,750	EMVY250□DA332MMN0S		
	680	HA0	0.30	450	EMVY6R3□DA681MHA0G		35	4.7	D55	3.0	60	EMVY350ADA4R7MD55G	
	1,000	HA0	0.30	450	EMVY6R3□DA102MHA0G			10	E55	1.8	95	EMVY350ADA100ME55G	
	1,500	JA0	0.15	670	EMVY6R3□DA152MJA0G			22	F55	1.0	140	EMVY350ADA220MF55G	
	2,200	KE0	0.070	820	EMVY6R3□RA222MKE0S			33	F55	1.0	140	EMVY350ADA330MF55G	
	2,200	LH0	0.054	1,260	EMVY6R3□DA222MLH0S			47	F55	1.0	140	EMVY350ADA470MF55G	
	3,300	KG5	0.060	950	EMVY6R3□RA332MKG5S			47	F61	1.0	140	EMVY350ADA470MF61G	
	3,300	MH0	0.054	1,350	EMVY6R3□DA332MMH0S			68	F80	0.34	280	EMVY350ADA680MF80G	
	4,700	LN0	0.038	1,630	EMVY6R3□DA472MLN0S			100	HA0	0.30	450	EMVY350□DA101MHA0G	
	4,700	MH0	0.054	1,350	EMVY6R3□DA472MMH0S			220	HA0	0.30	450	EMVY350□DA221MHA0G	
	6,800	LN0	0.038	1,630	EMVY6R3□DA682MLN0S			330	JA0	0.15	670	EMVY350□DA331MJA0G	
6,800	MN0	0.038	1,750	EMVY6R3□DA682MMN0S	470	KE0		0.070	820	EMVY350□RA471MKE0S			
8,200	MN0	0.038	1,750	EMVY6R3□DA822MMN0S	470	LH0		0.054	1,260	EMVY350□DA471MLH0S			
10	22	E55	1.8	95	EMVY100ADA220ME55G	1,000		LH0	0.054	1,260	EMVY350□DA102MLH0S		
	33	E55	1.8	95	EMVY100ADA330ME55G	1,000		MH0	0.054	1,350	EMVY350□DA102MMH0S		
	47	F55	1.0	140	EMVY100ADA470MF55G	2,200		MN0	0.038	1,750	EMVY350□DA222MMN0S		
	100	F55	1.0	140	EMVY100ADA101MF55G	50		1.0	D55	5.0	30	EMVY500ADA1R0MD55G	
	220	F80	0.34	280	EMVY100ADA221MF80G			2.2	D55	5.0	30	EMVY500ADA2R2MD55G	
	330	HA0	0.30	450	EMVY100□DA331MHA0G		3.3	D55	5.0	30	EMVY500ADA3R3MD55G		
	470	HA0	0.30	450	EMVY100□DA471MHA0G		4.7	E55	3.0	50	EMVY500ADA4R7ME55G		
	680	JA0	0.15	670	EMVY100□DA681MJA0G		10	F55	2.0	70	EMVY500ADA100MF55G		
	1,000	JA0	0.15	670	EMVY100□DA102MJA0G		22	F55	2.0	70	EMVY500ADA220MF55G		
	2,200	KG5	0.060	950	EMVY100□RA222MKG5S		33	F80	0.60	170	EMVY500ADA330MF80G		
	2,200	LH0	0.054	1,260	EMVY100□DA222MLH0S		47	F80	0.60	170	EMVY500ADA470MF80G		
	3,300	LH0	0.054	1,260	EMVY100□DA332MLH0S		68	HA0	0.60	300	EMVY500□DA680MHA0G		
	3,300	MH0	0.054	1,350	EMVY100□DA332MMH0S		100	HA0	0.60	300	EMVY500□DA101MHA0G		
	4,700	LN0	0.038	1,630	EMVY100□DA472MLN0S		220	JA0	0.30	500	EMVY500□DA221MJA0G		
	4,700	MN0	0.038	1,750	EMVY100□DA472MMN0S		330	KE0	0.11	650	EMVY500□RA331MKE0S		
	6,800	MN0	0.038	1,750	EMVY100□DA682MMN0S		330	LH0	0.087	900	EMVY500□DA331MLH0S		
	16	10	D55	3.0	60		EMVY160ADA100MD55G	470	LH0	0.087	900	EMVY500□DA471MLH0S	
22		E55	1.8	95	EMVY160ADA220ME55G		470	MH0	0.087	1,060	EMVY500□DA471MMH0S		
33		F55	1.0	140	EMVY160ADA330MF55G		1,000	MN0	0.050	1,520	EMVY500□DA102MMN0S		
47		F55	1.0	140	EMVY160ADA470MF55G		63	68	KE0	0.19	500	EMVY630□RA680MKE0S	
100		F55	1.0	140	EMVY160ADA101MF55G	100		KE0	0.19	500	EMVY630□RA101MKE0S		
220		F80	0.34	280	EMVY160ADA221MF80G	220		KE0	0.19	500	EMVY630□RA221MKE0S		
330		HA0	0.30	450	EMVY160□DA331MHA0G	220		LH0	0.12	845	EMVY630□DA221MLH0S		
470		HA0	0.30	450	EMVY160□DA471MHA0G	330		LH0	0.12	845	EMVY630□DA331MLH0S		
680		JA0	0.15	670	EMVY160□DA681MJA0G	330		MH0	0.12	905	EMVY630□DA331MMH0S		
1,000		KE0	0.070	820	EMVY160□RA102MKE0S	470		LN0	0.085	1,100	EMVY630□DA471MLN0S		
1,000		LH0	0.054	1,260	EMVY160□DA102MLH0S	470		MH0	0.12	905	EMVY630□DA471MMH0S		
2,200		LH0	0.054	1,260	EMVY160□DA222MLH0S	80		100	KE0	0.33	450	EMVY800□RA101MKE0S	
2,200		MH0	0.054	1,350	EMVY160□DA222MMH0S			220	KG5	0.26	550	EMVY800□RA221MKG5S	
3,300		LN0	0.038	1,630	EMVY160□DA332MLN0S			330	LN0	0.16	900	EMVY800□DA331MLN0S	
3,300		MH0	0.054	1,350	EMVY160□DA332MMH0S			330	MH0	0.24	700	EMVY800□DA331MMH0S	
4,700		MN0	0.038	1,750	EMVY160□DA472MMN0S			470	MN0	0.16	950	EMVY800□DA471MMN0S	
25		10	E55	1.8	95			EMVY250ADA100ME55G	100	47	KE0	0.33	450
	22	F55	1.0	140	EMVY250ADA220MF55G			68		KE0	0.33	450	EMVY101□RA680MKE0S
	33	F55	1.0	140	EMVY250ADA330MF55G	100		KE0		0.33	450	EMVY101□RA101MKE0S	
	47	F55	1.0	140	EMVY250ADA470MF55G	100		LH0		0.24	650	EMVY101□DA101MLH0S	
	100	F80	0.34	280	EMVY250ADA101MF80G	220	LN0	0.16		900	EMVY101□DA221MLN0S		
	220	HA0	0.30	450	EMVY250□DA221MHA0G	220	MH0	0.24		700	EMVY101□DA221MMH0S		
						330	MN0	0.16		950	EMVY101□DA331MMN0S		

□ : 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 MN0	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.