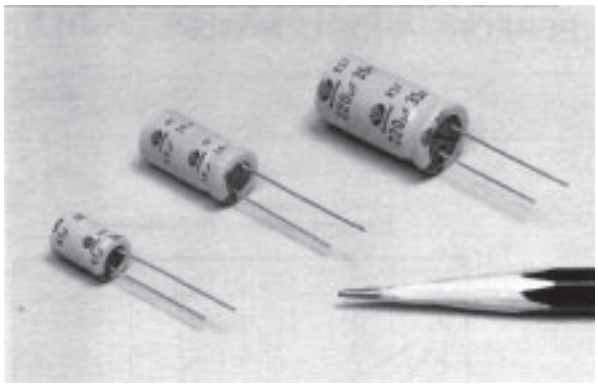
ALUMINUM ELECTROLYTIC CAPACITORS

Low Z, Subminiature, Radial Leads

Features

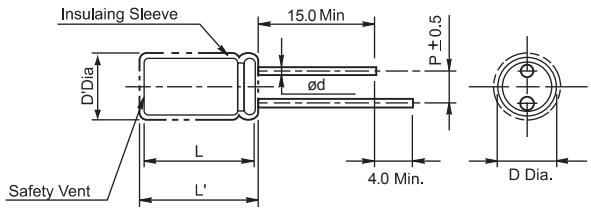
- Low ESR, Low impedance, Subminiature, Radial
- Large permissible ripple current
- High performance and reliability
- Load life of 2000 hours at 105˚C
- Possible cleaning by Freon TE, TES, TMS (5 min)



Specifications

Item	Performance Characteristics							
Operating temperature range	-55˚C ~ +105˚C							
Rated working voltage range	6.3V ~ 63V							
Nominal capacitance range	22μF ~ 2200 μF, ±20%(at 20˚C, 120Hz)							
D.C Leakage current(at 20˚C)	The following specifications shall be satisfied when the rated voltage is applied for the required time. I ≤ 0.01CV (2 min) Where I =Leakage current(μA) C=Nominal capacitance(μF) V=Rated voltage (V)							
Tan δ(max., at 20˚C, 120Hz)	W.V(V)	6.3	10	16	25	35	50	63
	Tan δ	0.20	0.15	0.10	0.08	0.07	0.06	0.05
	When capacitance is over 1000 μF, Tan δshall be added 0.02 to the listed value with increase of every each 1000 μF.							
Characteristics at low temperature(max.) (impedance ratio at 120Hz)	W.V(V)	6.3~10		16		25~63		
	Z-55˚C/Z20˚C	3		2		2		
Load life	After applying rated working voltage for 2000 hours at +105˚C and then being stabilized at +20˚C, capacitors shall meet following limits.							
	Capacitance change	Within ± 20% of initial measured value						
	Tan δ	≤ 200% of initial specified value						
	Leakage current	≤ Initial specified value						
Shelf life	After storage for 1000 hours at +105˚C with no voltage applied and then being stabilized at +20˚C, capacitors shall meet following limits.							
	Capacitance change	Within ± 20% of initial measured value						
	Tan δ	≤ 150% of initial specified value						
	Leakage current	≤ 200% of initial specified value						

Case sizes and Dimensions



• Standard lead style

øD	10.0	13.0	16.0
P	5.0	5.0	7.5
ød	0.6		0.8

D' = [D+0.5]Max. L'= [L+1.5]Max.

Ripple current coefficient

• Frequency

W.V \ Freq(Hz)	50	120	300	1K	10~100K
6.3~16V	0.54	0.70	0.85	0.95	1
25~35V	0.43	0.57	0.73	0.88	1
50~63V	0.39	0.55	0.71	0.86	1

• Temperature

Temperature	≤ 70˚C	85˚C	105˚C
Factor	2.83	2.2	1.0

Dimensions & Maximum permissible ripple current [mA(rms) at 105˚C, 10~100Hz]

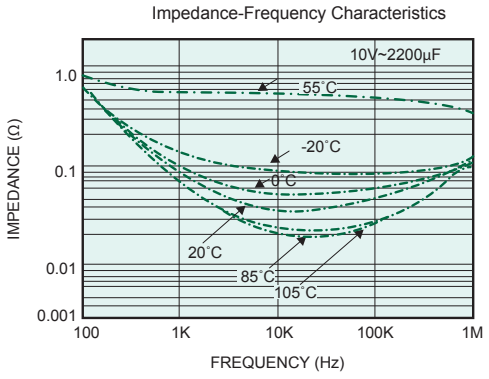
øD x L(mm)

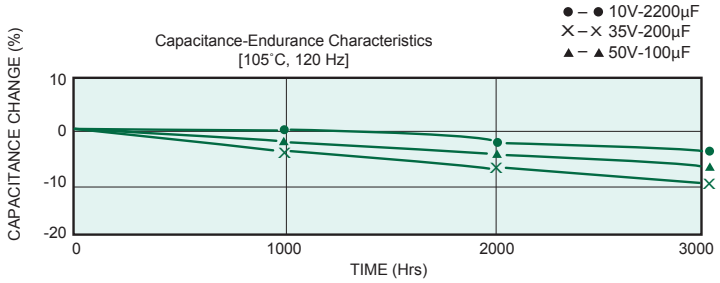
W.V / Cap(μF)	6.3		10		16		25		35		50		63	
	SIZE	IR	SIZE	IR	SIZE	IR	SIZE	IR	SIZE	IR	SIZE	IR	SIZE	IR
22											10x12.5	150	10x16	200
33									10x12.5	180	10x16	220	10x16	240
47							10x12.5	200	10x12.5	210	10x16	260	10x20	310
100					10x12.5	240	10x16	310	10x20	370	13x20	450	13x25	540
220	10x12.5	250	10x16	350	10x16	400	13x20	540	13x25	650	16x25	820	16x31.5	1080
330	10x16	360	10x20	460	10x20	520	13x25	700	16x25	840	16x31.5	1030	16x35.5	1270
470	10x20	490	13x20	610	13x20	700	16x25	960	16x25	1090	16x35.5	1350		
1000	13x25	810	13x25	900	16x25	1150	16x31.5	1320						
2200	16x25	1090	16x31.5	1520	16x35.5	1780								

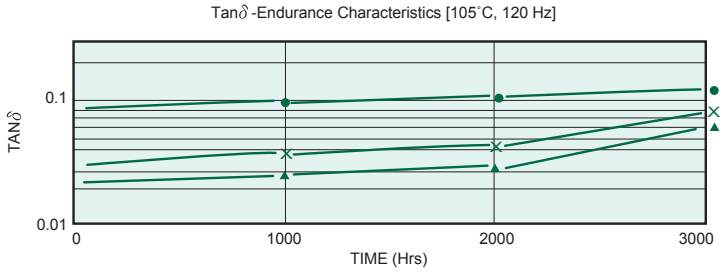
Max. Impedance (Ω)

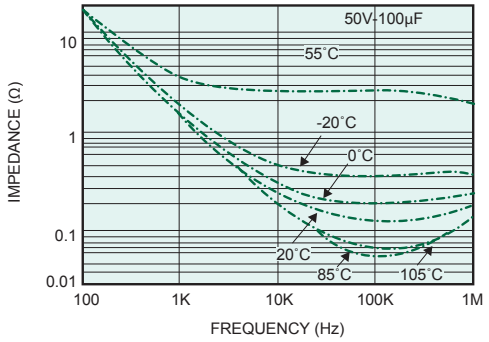
W.V / Max-Z(Ω) / Cap(μF)	6.3		10		16		25		35		50		63	
	@20°C	@20°C 100KHz	@20°C 10KHz	@20°C 100KHz	@20°C 10KHz	@20°C 100KHz	@20°C 10KHz	@20°C 100KHz	@20°C 10KHz	@20°C 100KHz	@20°C 10KHz	@20°C 100KHz	@20°C 10KHz	@20°C 100KHz
22	10KHz										1.35	0.60	1.35	0.60
33									0.90	0.53	0.90	0.50	0.90	0.50
47							0.70	0.42	0.80	0.53	0.80	0.50	0.80	0.50
100					0.54	0.45	0.36	0.27	0.35	0.23	0.30	0.10	0.30	0.10
220		0.45	0.45	0.38	0.29	0.26	0.15	0.14	0.15	0.10	0.14	0.08	0.14	0.08
330	0.48	0.27	0.21	0.18	0.21	0.18	0.12	0.10	0.09	0.07	0.09	0.05	0.08	0.06
470	0.35	0.23	0.15	0.14	0.12	0.11	0.08	0.07	0.08	0.05	0.06	0.05		
1000	0.26	0.14	0.11	0.11	0.09	0.09	0.06	0.06						
2200	0.15	0.07	0.05	0.05	0.05	0.05								

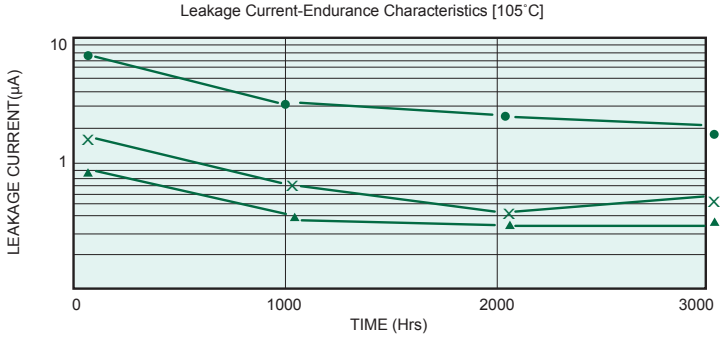
PERFORMANCE CURVES











ORDERING INFORMATION for Leaded Type

Lead-Free RoHS Compliant

Daewoo Components Corp.

Through-Hole Part Numbering System Example:

RM = Leaded Radial 85°C Miniature Series, 102 = 1000μF, M =20% Tolerance, 1E 25 Volts, B = Bulk, 1020 = Case size (Dia x H) = 10.0 x 20.0mm, E = 5.0mm

RM 102 M 1E B 1020 E
(1) (2) (3) (4) (5) (6) (7)

- (7) Lead Spacing
- (6) Dimensions (Dia x H in mm
- (5) Packaging & Lead Style
- (4) Rated Voltage
- (3) Capacitance Tolerance
- (2) Capacitance Value
- (1) Series

(1) Series
See Quick Guide on page 2
Example: RSS, RM, RMU,...

(2) Capacitance Value Code
Capacitance expressed in micro Farads (μF)
First two digits are significant figures
Third digit denotes the number of zeros
Use R for decimal point for values less then 10μF

Examples:

CODE	Capacitance
R10	0.1 μF
R68	0.68 μF
1R0	1.0 μF
100	10 μF
680	68 μF
471	470 μF
102	1000 μF
103	10000 μF

(3) Capacitance Tolerance Code

CODE	Cap. Tol.	CODE	Cap. Tol.
J	±5%	V	-10% ~ +20%
K	±10%	Q	-10% ~ + 30%
M	±20%	T	-10% ~ + 50%
R	+20%, -0%		

(4) Rated Voltage Code

CODE	Voltage	CODE	Voltage
0G	4.0V	2C	160V
0J	6.3V	2S	180V
1A	10V	2D	200V
1C	16V	2E	250V
1E	25V	2F	315V
1V	35V	2V	350V
1H	50V	2G	400V
1J	63V	2W	450V
1K	80V	3Z	1000V
2A	100V		

(5) Packaging Form & Lead Style Code (see page 7, 8, 9 for details)

	Code	Packaging Form & Lead Style
Bulk	B	Bulk: Standard Package
	L	Bulk: 4 -8ø Long Leads Formed to 5 mm Pitch
Snap-In	1	10-13ø Snap-in Cut 5.0mm
	2	16-13ø Snap-in Cut 5.0mm
	3	10-13ø Snap-in Cut 4.5mm
	4	16-18ø Snap-in Cut 4.5mm
	5	4-8ø Snap-in Cut 7.5mm
Form	F	4-8ø Forming Cut 6.5mm
	G	4-8ø Forming Cut 10.0mm
Straight Cut	C	4-18ø Straight Cut 4.0mm
	6	4-18ø Straight Cut 3.1mm
	7	4-18ø Straight Cut 5.0mm
	8	4-18ø Straight Cut 6.35mm
Ammo Tape (+) Leading	A	4-8ø Straight Ammo Detail Ranges: 4-6.3ø; F=2.5mm 8ø; F=3.5mm 4-8ø Form Tape & Ammo 5mm Pitch 10ø Straight Ammo Tape 5mm Pitch 13ø Straight Ammo Tape 5mm Pitch 16-18ø Straight Ammo Tape 5mm Pitch
Tape & Reel (+) Leading	T	4-8ø Straight Ammo Detail Ranges: 4-6.3ø; F=2.5mm 8ø; F=3.5mm 4-13ø Form Tape & Reel 5mm Pitch 10-13ø Straight Reel Tape 5mm Pitch

NOTE: Standard Pack Anode(+) Lead Leading FEEDS OFF FIRST
Special Option Cathode(-) Lead Leading available upon request
Standard Packages: B = Bulk, A = Ammo, T = Tape & Reel

(6) Example Dimension Code (Diameter x Height in mm)

Size Code	Diameter	Height	Size Code	Diameter	Height
0405	4	5	1320	13	20
0407	4	7	1631	16	31.5
0505	5	5	1835	18	35.5
0507	5	7	2240	22	40
0607	6.3	7	2545	25	45
0511	5	11	3035	30	35
0605	6	5	3500	35	100
0611	6.3	11	3501	35	110
0805	8	5	5102	51	120
0811	8	11	6303	63.5	130
1012	10	12.5	7604	76	140
1220	12.5	20	8904	89	140

(7) Lead Spacing Code (LS)

Code	X	A	B	C	D	E	J	F
LS	1.0	1.5	2.0	2.5	3.5	5.0	7.0	7.5
Code	K	M	G	P	H	Q	R	S
LS	8.0	10.0	10.5	12.0	12.5	12.8	15.0	16.0
Code	T	U	V	W	Y	Z		
LS	20.0	21.7	28.3	30.0	31.6	32		