

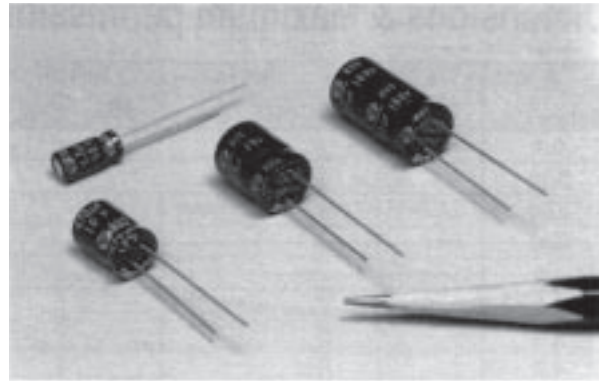
# RUS SERIES



## ALUMINUM ELECTROLYTIC CAPACITORS 105°C Standard, Radial Leads

### Features

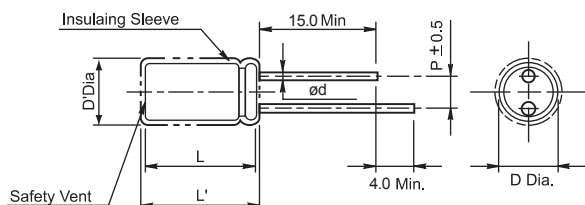
- 105°C Standard, Radial
- Wide operating temperature range
- High and stable quality
- Very high CV capacity per unit volume
- Load life of 1000 hours at 105°C
- Possible cleaning by Freon TE (to 100V : 3 min )



### Specifications

Item	Performance Characteristics										
Operating temperature range	-40°C ~ +105°C			-40°C ~ +105°C			-25°C ~ +105°C				
Rated working voltage range	6.3V ~ 100V			160V ~ 250V			350V ~ 450V				
Nominal capacitance range	0.1 μF ~ 15000 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.										
	$I \leq 0.01CV + 3 \mu F$ (2min)			$I \leq 0.01CV + 20 \mu A$ (5min)			$I \leq 0.02CV + 30 \mu A$ (5min)				
	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	100	160~250	350~450
	Tan δ	0.24	0.20	0.17	0.15	0.12	0.10	0.10	0.08	0.12	0.20
	When capacitance is over 1000 μF, Tan δ shall 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	35	50~100	160~250	350~450		
	Z-25°C/Z20°C	4	3	2	2	2	2	2	2	6	
	Z-40°C/Z20°C	8	6	4	3	3	3	3	3	-	
Load life	After applying rated working voltage for 1000 hours at +105 °C and then being stabilized at +20 °C, capacitors shall meet following limits.										
	Capacitance change					Within ± 25% of initial measured value(6.3V~16V)					
						Within ± 20% of initial measured value (25V~)					
Tan δ					≤ 150% 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					≤ 200% of initial specified value					
Leakage current					≤ 200% of initial specified value						

### Case sizes and Dimensions



#### • Standard lead style

øD	5.0	6.3	8.0	10.0	13.0	16.0	18.0
P	2.0	2.5	3.5	5.0		7.5	
øD	0.5		0.6			0.8	

D'=[D+0.5] Max.

L'=[L+1.0] Max. at D ≤8.0

L'=[L+1.5]Max. at D ≥10.0

### Ripple current coefficient

#### • Frequency

Cap(μF) \ Freq(Hz)	50	120	400	1K	10K	50~100K
Cap ≤ 10	0.8	1	1.30	1.45	1.65	1.70
10 < Cap ≤ 100	0.8	1	1.23	1.36	1.48	1.53
100 < Cap ≤ 1000	0.8	1	1.16	1.25	1.35	1.38
1000 < Cap	0.8	1	1.11	1.17	1.25	1.28

#### • Temperature

Temperature	≤70°C	85°C	105°C
Factor	1.95	1.65	1.0

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## Dimensions & Maximum permissible ripple current [mA(rms) at 105°C, 120Hz]

 $\varnothing D \times L(\text{mm})$ 

W.V(V) Cap(μF)	6.3(0J)		10(1A)		16(1C)		25(1E)		35(1V)		50(1H)		63(1J)		100(2A)		
	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	
0.1												5x11	3			5x11	3
0.22												5x11	5			5x11	5
0.33												5x11	6			5x11	6
0.47												5x11	9			5x11	9
1.0												5x11	14			5x11	15
2.2												5x11	21			5x11	23
3.3												5x11	26			5x11	32
4.7												5x11	32			5x11	37
10												5x11	48			5x11	60
22										5x11	66	5x11	73	5x11	51	63x11	60
33								5x11	77	5x11	84	63x11	98	63x11	85	8x11.5	103
47					5x11	91	5x11	98	63x11	110	63x11	120	63x11	109	10x12.5	148	
100	5 x 11	96	5 x 11	105	63x11	142	63x11	147	8x11.5	180	8x11.5	198	8x11.5	147	10x16	191	
220	6.3 x 11	168	6.3 x 11	179	8x11.5	231	8x11.5	252	10x12.5	329	10x16	382	10x20	255	13x20	343	
330	6.3 x 11	207	8 x 11.5	255	8x11.5	290	10x12.5	366	10x16	430	10x20	521	10x20	460	16x25	623	
470	8 x 11.5	280	8 x 11.5	316	10x12.5	385	10x16	510	10x20	550	13x20	685	13x20	637	16x25	799	
1000	10 x 12.5	483	10 x 16	570	10x20	714	13x20	854	13x25	1025	13x25	1250	13x25	815	16x31.5	1020	
2200	13 x 20	868	13 x 20	927	13x25	1115	16x25	1280	16x31.5	1420	16x31.5	1760					
3300	13 x 20	1025	13 x 25	1180	16x25	1370	16x31.5	1590	18x35.5	1850							
4700	16 x 25	1390	16 x 25	1480	16x31.5	1740	18x35.5	1950									
6800	16 x 25	1595	16 x 31.5	1795	18x35.5	2090											
10000	16 x 31.5	1930	18 x 35.5	2210													
15000	18 x 35.5	2290															

W.V(V) Cap(μF)	160(2C)		200(2D)		250(2E)		350(2V)		400(2G)		450(2W)	
	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>	SIZE	I <sub>R</sub>
1.0	6.3 x 11	14	6.3 x 11	14	6.3 x 11	14	8 x 11.5	16	8 x 11.5	16	8x11.5	16
2.2	6.3 x 11	22	6.3 x 11	22	8 x 11.5	26	10 x 12.5	30	10 x 12.5	30	10x12.5	30
3.3	8 x 11.5	32	8 x 11.5	31	10 x 12.5	37	10 x 12.5	38	10 x 16	39	10x16	39
4.7	8 x 11.5	36	10 x 12.5	42	10 x 16	45	10 x 16	48	10 x 16	48	10x20	48
10	10 x 16	66	10 x 16	66	10 x 20	72	10 x 20	77	13 x 20	85	13x20	85
22	10 x 20	110	10 x 20	110	13 x 20	133	13 x 25	142	16 x 25	148	16x25	148
33	13 x 20	161	13 x 25	168	13 x 25	172	16 x 25	181	16 x 31.5	200	16x31.5	200
47	13 x 25	195	13 x 25	198	16 x 25	214	16 x 35.5	248	16 x 35.5	262	18 x 40	265
100	16 x 25	340	16 x 31.5	361	18 x 35.5	384	18 x 40	424				
220	18 x 35.5	596	18 x 40	615								

 $I_R$  : Maximum permissible ripple current [mA(rms) at 105°C, 120Hz]

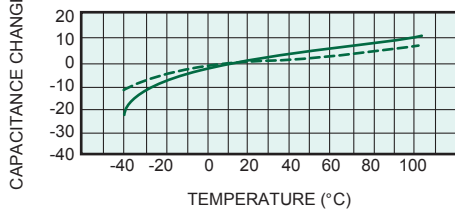
# RUS SERIES



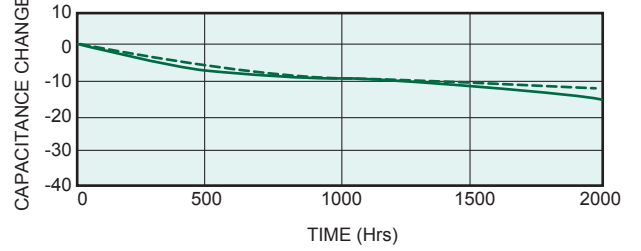
## PERFORMANCE CURVES

—— 16V-470μF  
 - - - - 250V-47μF

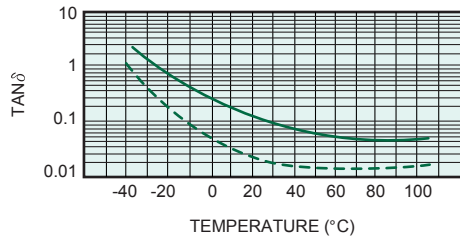
Capacitance-Temperature Characteristics (120 Hz)



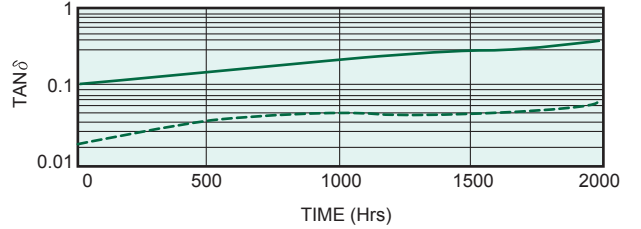
Capacitance-Endurance Characteristic [105°C (221°F), 120 Hz]



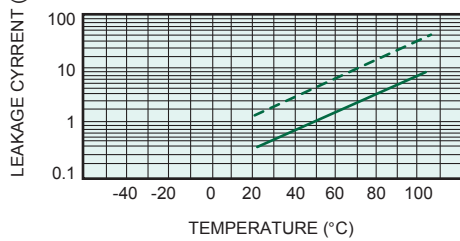
Tanδ -Temperature Characteristics (120 Hz)



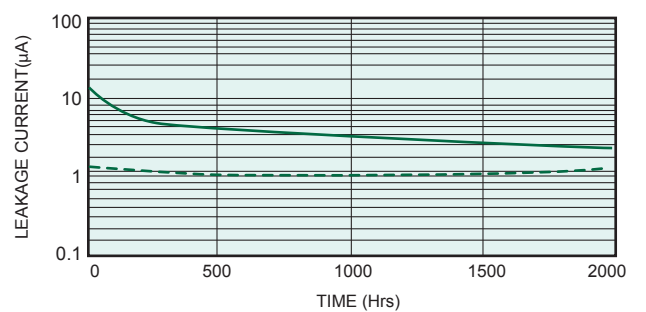
Tanδ -Endurance Characteristic [105°C (221°F), 120 Hz]



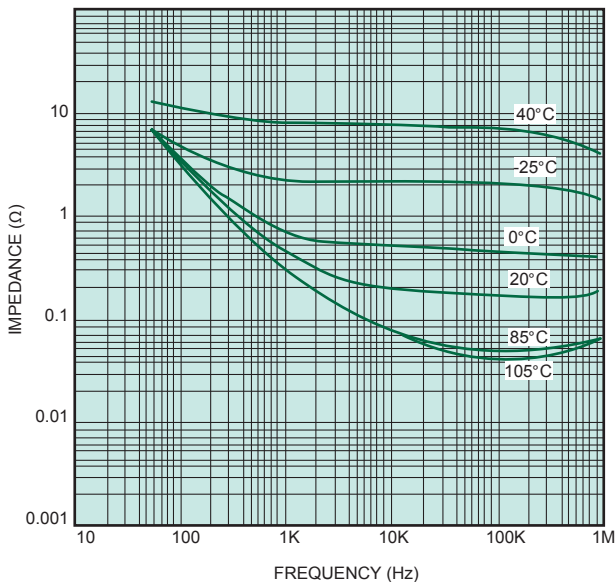
Leakage Current- Temperature Characteristics



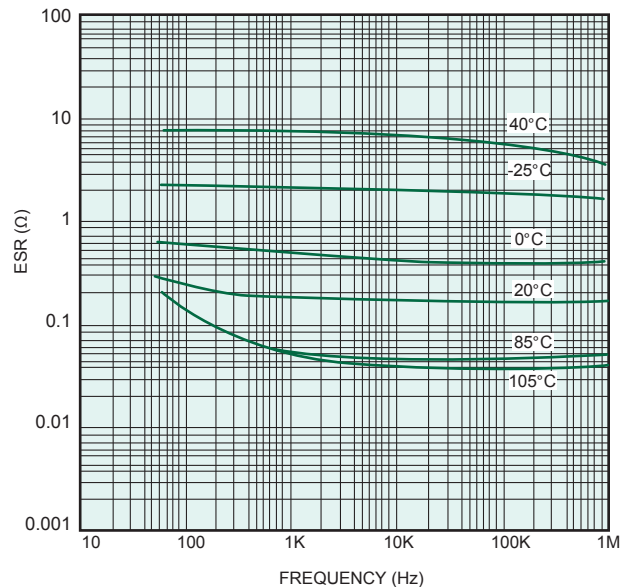
Leakage Current-Endurance Characteristics [105°C (221°F)]



Impedance-Frequency Characteristics



ESR-Frequency Characteristics



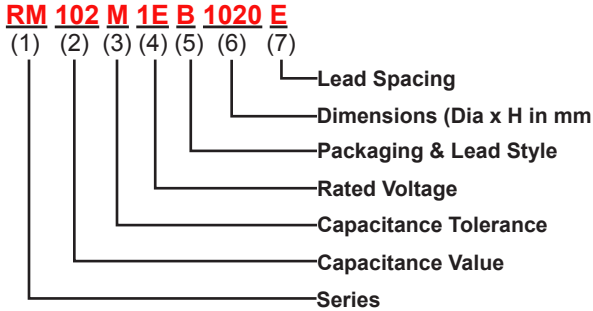
# ORDERING INFORMATION for Leaded Type



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



### (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 than 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		