

# RSS SERIES

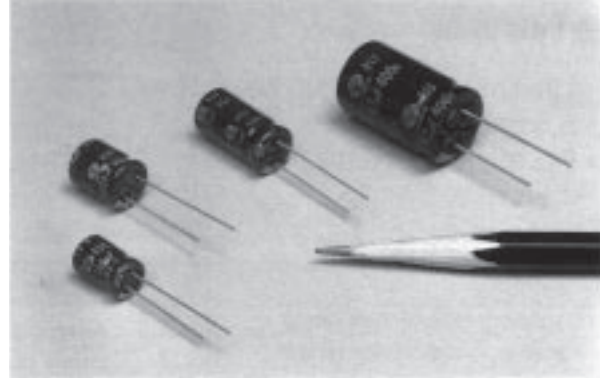


# ALUMINUM ELECTROLYTIC CAPACITORS

85°C Standard, Radial Leads

## Features

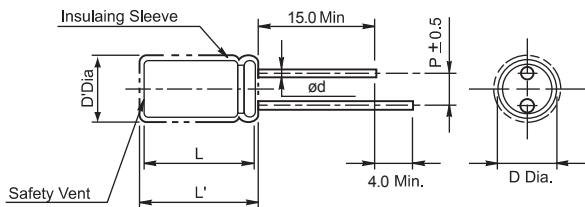
- 85°C Standard, Radial
- High performance
- Very high CV capacity per unit volume
- Ideal for automatic insertion
- Load life of 2000 hours at 85°C
- Possible cleaning by Freon TE (to 100V : 3 min)



## Specifications

Item	Performance Characteristics										
Operating temperature range	-40°C ~ +85°C			-40°C ~ +85°C				-25°C ~ +85°C			
Rated working voltage range	6.3V ~ 100V			160V ~ 250V				350V ~ 450V			
Nominal capacitance range	0.1 μF ~ 27000 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 or 3 μF (2min) Whichever is greater			I ≤ 0.01CV + 10 μA (3min)				I ≤ 0.02CV + 30 μA (3min)			
	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	0.26	0.22	0.17	0.15	0.12	0.10	0.10	0.08	0.20	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	10	8	6	4	3	3	3	3	-	
Load life	After applying rated working voltage for 2000 hours at +85°C 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					
Shelf life	After storage for 1000 hours at +85°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

ø D	5.0	6.3	8.0	10.0	13.0	16.0	18.0	22.0	25.0
P	2.0	2.5	3.5	5.0		7.5	10.0	12.5	
ø d	0.5		0.6	0.8	1.0				

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	60°C	70°C	85°C
Factor	1.65	1.37	1.0

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## Dimensions &amp; Maximum Permissible ripple current [mA(rms) at 85°C, 120Hz]

øD x L(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	6	5x11	6	5x11	6
0.22												5x11	8	5x11	8	5x11	8
0.33												5x11	10	5x11	10	5x11	10
0.47												5x11	14	5x11	14	5x11	14
1.0												5x11	17	5x11	17	5x11	21
2.2												5x11	25	5x11	25	5x11	32
3.3												5x11	35	5x11	35	5x11	45
4.7												5x11	42	5x11	45	5x11	52
10					5x11	60	5x11	60	5x11	60	5x11	68	5x11	72	5x11, 6.3x11	85	
15					5x11	85	5x11	85	5x11	85	5x11	85					
22					5x11	75	5x11	90	5x11	95	5x11	105	6.3x11	120	8x11.5	142	
33					5x11	85	5x11	110	5x11	120	6.3x11	140	6.3x11	157	10x12.5	207	
47					5x11	130	5x11	140	6.3x11	157	6.3x11	172	8x11.5	210	10x16	284	
100	5x11	135	5x11	150	6.3x11	200	6.3x11	210	6.3x11 8x11.5	231 258	8x11.5	283	10x12.5	365	13x20	470	
220	6.3x11	240	6.3x11	255	8x11.5	330	8x11.5	360	10x12.5	470	10x16	545	10x12.5	638	16x25	820	
330	6.3x11	310	8x11.5	365	8x11.5	415	10x12.5	523	10x16	615	10x20	720	10x20	910	16x25	1095	
470	8x11.5	400	8x11.5	430	10x12.5	550	10x16	730	10x20	810	13x20	965	13x20	1150	16x31.5	1370	
1000	10x12.5	690	10x16	810	10x20	1020	13x20	1220	13x25 16x25	1510 1760	16x25	1760	13x25	1850	22x40	2610	
2200	13x20	1240	13x20	1310	13x25	1590	16x25	1835	16x31.5	2090	18x35.5	2540	22x40	3150	25x40	3510	
3300	13x20	1460	13x25	1685	16x25	2010	16x31.5	2315	18x35.5	2740	22x40	3500	16x31.5	4060			
4700	16x25	1990	16x25	2120	16x31.5	2485	18x35.5	2875	22x40	3660	25x40	4270	22x40				
6800	16x25	2275	16x31.5	2550	18x35.5	2990	22x40	3900	25x40	4510			25x40				
10000	16x31.5	2760	18x35.5	3160	22x40	3920	25x40	4550									
15000	18x35.5	3270	22x40	4020	25x40	4590											
22000	22x40	4050	25x40	4700													
27000	25x40	4750															

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	6.3x11	22	6.3x11	22	6.3x11	22	8x11.5	24	8x11.5	24	8x11.5	24
2.2	6.3x11	33	6.3x11	33	8x11.5	39	10x12.5	45	10x12.5	47	10x12.5	47
3.3	8x11.5	51	8x11.5	51	10x12.5	58	10x12.5	56	10x16	58	10x16	58
4.7	8x11.5	57	10x12.5	64	10x16	73	10x16	72	10x16	74	10x20	76
10	8x12 10x13	80 83	10x16	95	10x20	108	10x20	118	13x20	132	13x20	135
22	10x20	171	10x20	171	13x20	205	13x25	215	16x25	235	16x25	235
33	13x20	248	13x25	265	13x25	275	16x25	270	16x31.5	298	16x35.5	305
47	13x25	295	13x25	305	16x25	340	16x35.5	368	16x35.5	405	18x40	415
100	16x25	530	16x31.5	540	18x35.5	560	18x40	640	22x40	720	25x40	740
220	18x35.5	890	18x40	910	22x40	990	25x50	1260				
330	22x40	1220	22x40	1290	25x40	1410						
470	25x40	1740	25x40	1810								

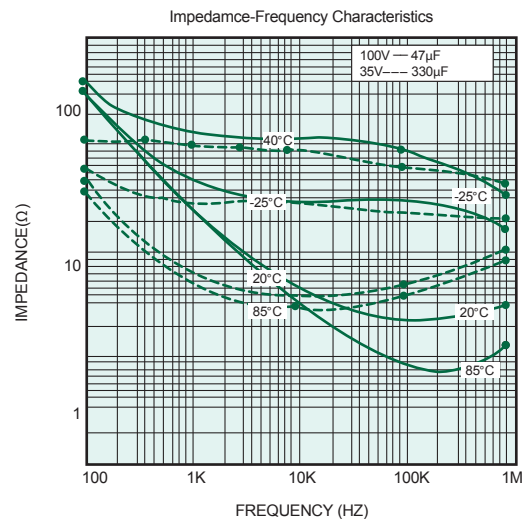
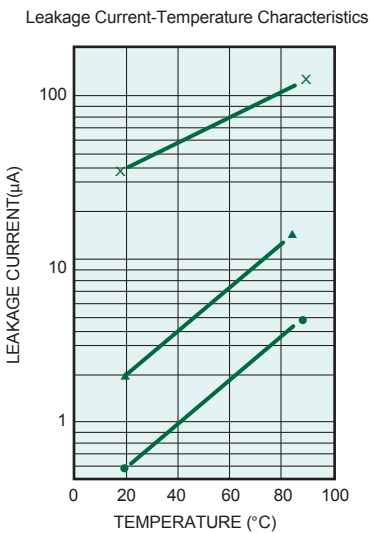
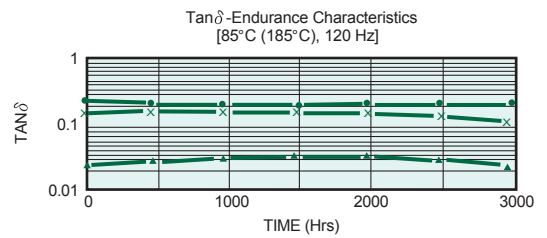
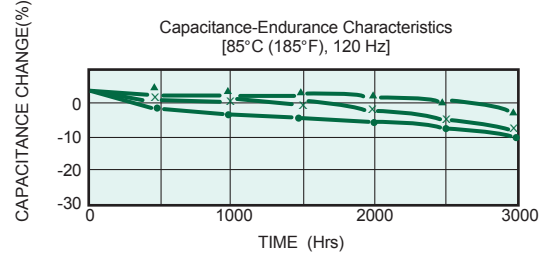
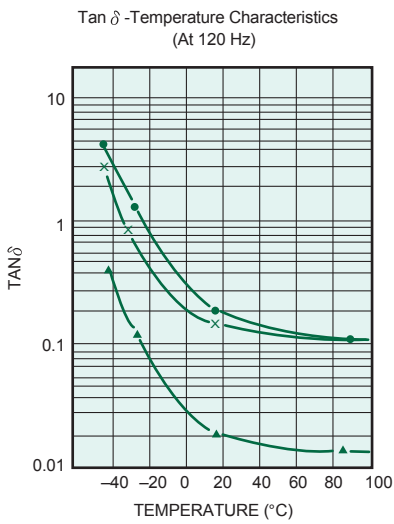
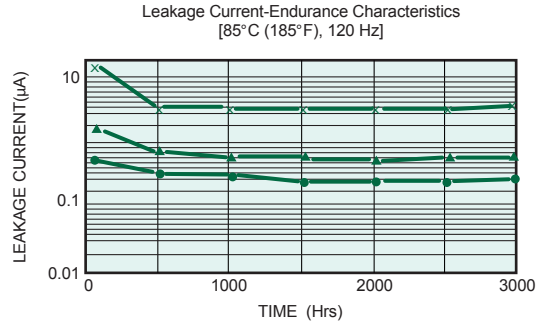
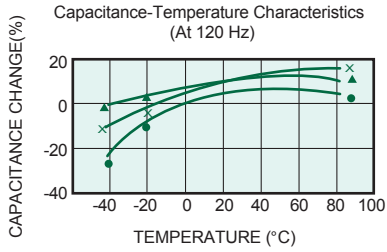
I<sub>r</sub> : Maximum permissible ripple current [mA(rms) at 85°C, 120Hz]

# RSS SERIES



## PERFORMANCE CURVES

- ● 10V-100 $\mu$ F
- × × 35V-3300 $\mu$ F
- ▲ ▲ 100V-47 $\mu$ F



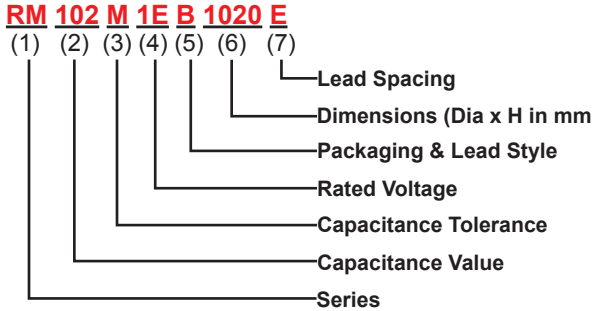
# ORDERING INFORMATION (CEL)



Daewoo Components Corp.

## Through-Hole Part Numbering System Example:

**CEL** = Leaded Type, **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
<b>Bulk</b>	<b>B</b>	Bulk: Standard Package
	<b>L</b>	"FL" Bulk: 4 -8ø Long Leads Formed to 5 mm Pitch
<b>Snap-In</b>	<b>1</b>	"SA/S1A": 10-13ø Snap-in Cut 5.0mm
	<b>2</b>	"SB/SB1": 16-13ø Snap-in Cut 5.0mm
	<b>3</b>	"SC/S2A": 10-13ø Snap-in Cut 4.5mm
	<b>4</b>	"SE/S2B": 16-18ø Snap-in Cut 4.5mm
	<b>5</b>	"SG/S3A": 4-8ø Snap-in Cut 7.5mm
<b>Form</b>	<b>F</b>	"FF/FCF": 4-8ø Forming Cut 6.5mm
<b>Straight Cut</b>	<b>C</b>	"CJ": 4-18ø Straight Cut 4.0mm
	<b>6</b>	"CR": 4-18ø Straight Cut 3.1mm
	<b>7</b>	"CS": 4-18ø Straight Cut 5.0mm
	<b>8</b>	"CE": 4-18ø Straight Cut 6.35mm
<b>Ammo Tape (+) Leading</b>	<b>A</b>	"TS"/"TSSA": 4-8ø Straight Ammo Detail Ranges: 4-6.3ø; F=2.5mm 8ø; F=3.5mm
		"T5/TAA": 4-8ø Form Tape & Ammo 5mm Pitch
		"T7/TSAA": 10ø Straight Ammo Tape 5mm Pitch
		"T9/TSAA": 13ø Straight Ammo Tape 5mm Pitch
		"TB/TSAA": 16-18ø Straight Ammo Tape 5mm Pitch
<b>Tape &amp; Reel (+) Leading</b>	<b>T</b>	"TQ/TSSRA": 4-8ø Straight Ammo Detail Ranges: 4-6.3ø; F=2.5mm 8ø; F=3.5mm
		"T1/TRA": 4-13ø Form Tape & Reel 5mm Pitch
		"T3/TSRA": 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		