

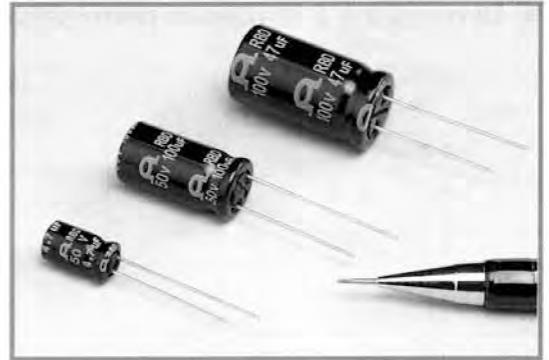


# RBD SERIES

Bi-Polar, Standard, Radial Leads

## Features

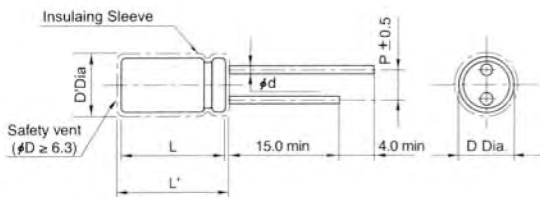
- Bi-polar, Standard, radial leads
- Ideal for inconsistent polarity circuits
- For the compaction of equipment
- Load life of 2000 hours at 85°C



## Specifications

Item	Performance Characteristics												
Operating temperature range	-40°C ~ +85°C												
Rated working voltage range	6.3V ~ 250V												
Nominal capacitance range	0.47 μF ~ 6800 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. $I \leq 0.03CV + 3\mu A (5 \text{ min})$ 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	100	160	200	250	
	Tan δ	0.25	0.24	0.20	0.20	0.16	0.14	0.12	0.12	0.15	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	63	100	160	200	250	
	Z-25°C/+20°C	4	3	2	2	2	2	2	2	3	3	3	
	Z-40°C/+20°C	10	8	6	4	4	4	4	4	5	5	5	
Load life	After applying rated working voltage for 2000 hrs at +85°C and then being stabilized at +20°C, During this test, the rated voltage shall be reversed on the capacitor every 250hrs, capacitors shall meet following limits.												
	Capacitance change	Within ±20% of the initial measured value											
	Tan δ	≤ 200% of the initial specified value											
	Leakage current	≤ The initial specified value											
Shelf life	After storage for 1000 hrs at +85°C with no voltage applied and then being stabilized at +20°C, capacitors shall meet following limits.												
	Capacitance change	Within ±20% of the initial measured value											
	Tan δ	≤ 200% of the initial specified value											
	Leakage current	≤ 200% of the initial specified value											

## Dimensions



### Standard lead style

φD	5.0	6.3	8.0	10.0	12.5	16.0	18.0
p	2.0	2.5	3.5	5.0		7.5	
φd	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	300	1K	10K	50~100K
Cap ≤ 10	0.72	1.0	1.25	1.45	1.65	1.70
10 < Cap ≤ 100	0.75	1.0	1.19	1.36	1.53	1.57
100 < Cap ≤ 1000	0.79	1.0	1.15	1.30	1.45	1.49
1000 < Cap	0.81	1.0	1.12	1.21	1.28	1.33

### Temperature

Temperature	≤ 45°C	60°C	70°C	85°C
Factor	1.4	1.25	1.15	1.0

**RBD** SERIES

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

φ D x L(mm)

Cap(μF)	W.V	6.3(0J)		10(1A)		16(1C)		25(1E)		35(1V)		50(1H)	
		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>
0.47												5x11	10
1.0												5x11	16
2.2												5x11	23
3.3												5x11	27
4.7										5x11	34	5x11	31
10						5x11	42	5x11	42	5x11	43	6.3x11	50
22				5x11	58	5x11	58	6.3x11	60	6.3x11	70	8x11.5	80
33		5x11	66	5x11	67	5x11	70	6.3x11	75	8x11.5	88	8x11.5	96
47		5x11	77	5x11	77	6.3x11	90	6.3x11	95	8x11.5	105	10x12.5	135
100		6.3x11	125	6.3x11	125	8x11.5	150	8x11.5	165	10x16	190	10x20	250
220		8x11.5	210	8x11.5	210	10x12.5	250	10x16	285	12.5x20	370	12.5x25	440
330		10x12.5	270	10x12.5	330	10x16	350	10x20	390	12.5x20	480	16x25	610
470		10x12.5	360	10x16	410	10x20	460	12.5x20	510	12.5x25	610	16x31.5	800
1000		10x20	640	12.5x25	720	12.5x25	810	16x25	870	16x31.5	1040		
2200		12.5x25	1050	16x25	1170	16x31.5	1420	18x35.5	1580				
3300		16x25	1470	16x31.5	1600	18x35.5	1780						
4700		16x31.5	1890	18x35.5	1960								
6800		18x35.5	2460										

Cap(μF)	W.V	63(1J)		100(2A)		160(2C)		200(2D)		250(2E)	
		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>
0.47				5x11	12						
1.0				5x11	19						
2.2				6.3x11	26						
3.3		5x11	28	6.3x11	33	10x16	49	10x16	42	10x20	46
4.7		6.3x11	32	6.3x11	42	10x16	59	10x20	55	10x20	56
10		6.3x11	55	8x11.5	70	12.5x20	109	12.5x20	95	12.5x20	140
22		8x11.5	90	10x16	120	12.5x25	177	16x25	170	16x25	186
33		10x12.5	120	10x20	180	16x25	240	16x31.5	239	16x35.5	257
47		10x16	160	12.5x20	210	16x35.5	329	18x35.5	321	18x40	324
100		12.5x20	300	16x25	370						
220		16x25	540	16x35.5	730						
330		16x31.5	630	18x40	990						
470		18x35.5	900								
1000											

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

# 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		