

## RV Series Chip type



### Features

- ◆ Chip type ,Low impedance
- ◆ Chip type with Endurance of 5000 hours at +105°C
- ◆ Designed for surface mounting on high density PC board
- ◆ Applicable to automatic mounting machine using carrier tape
- ◆ Complied to the RoHS directive

### Specifications

Item	Performance Characteristics											
Operating Temperature Range	-55 to +105°C	-40 to +105°C										
Rated Voltage Range	6.3 to 100 VDC	160~450 VDC										
Capacitance Range	1.0 to 6800μF	2.2 to 68μF										
Capacitance Tolerance	±20%(120Hz,+20°C)											
Leakage Current (+20°C,max.)	I ≤ 0.01 CV or 3 (μA) whichever is greater (2 minutes)	I ≤ 0.04 CV+100 μA (1 minute)										
Dissipation Factor (tan δ , at 20°C , 120Hz)	Working voltage(VDC)											
	D.F.(%)max											
Low Temperature Characteristics (Impedance ratio at 120Hz)	Impedance ratio max											
	Rated voltage(VDC)											
	Z-25°C/Z+20°C											
Endurance	Test condition											
	Duration time : 5000hours (2000 hours for ΦD ≤ 6.3)											
	Ambient temperature : +105°C											
Shelf Life	Test condition											
	Duration time : 1000Hrs											
	Ambient temperature : +105°C											
Resistance to soldering heat	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 250°C for 30 seconds.											
	Leakage current : Less than specified value											
	Capacitance change : Within ±10% of initial value											

### Multiplier for Ripple Current vs. Frequency

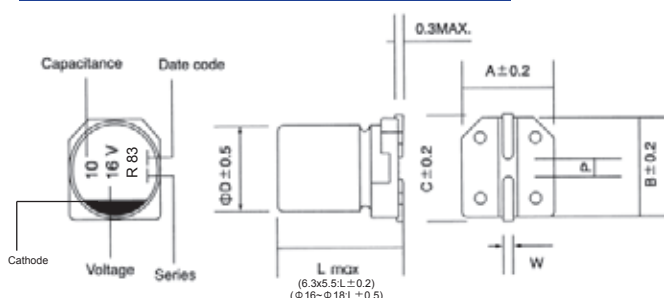
< 160V

CAP(μF)\Frequency(Hz)	60(50)	120	500	1K	10K	50K-100K
CAP ≤ 10	0.47	0.59	0.76	0.85	0.97	1.0
10 < CAP	0.52	0.65	0.80	0.89	0.97	1.0

≥ 160V

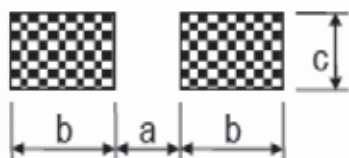
Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
Multiplier	0.80	1.00	1.25	1.40	1.55	1.6

### Diagram of Dimensions:(unit:mm)



φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	6.1	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.0	13.0	13.9	1.0~1.4	4.5
16	17	17.0	17.0	18.0	1.0~1.4	6.6
16	21.5	17.0	17.0	18.0	1.0~1.4	6.6
18	16.5	19.0	19.0	20.0	1.0~1.4	6.6
18	21.5	19.0	19.0	20.0	1.0~1.4	6.6

## Recommended land pattern:(unit:mm)



Φ DxL	a	b	c
4xall	1	2.6	1.6
5xall	1.4	3	1.6
6.3xall	2.1	3.5	1.6
8xL(height ≤6.5)	2.1	4.5	1.6
8xL(height >6.5)	2.8	4.2	1.9
10xall	4.3	4.4	1.9
12.5xall	4.3	5.8	2.5
16xall	6	6.5	3.5
18xall	6	7.5	3.5

## Case Size

VV (Vdc)	Cap (uF)	Size (mm)	Ripple current (mArms/105°C /100KHz)	Max Imp. 20°C 100KHz(Ω)
6.3	22	4x5.5	80	1.35
6.3	33	4x5.5	85	1.35
6.3	47	5x5.5	160	0.80
6.3	100	6.3x5.5	240	0.44
6.3	150	6.3x5.5	240	0.44
6.3	220	6.3x7.7	280	0.36
6.3	330	6.3x7.7	350	0.32
6.3	330	8x10.5	450	0.17
6.3	470	8x10.5	500	0.17
6.3	680	8x10.5	550	0.17
6.3	1000	8x10.5	550	0.17
6.3	1500	10x10.5	690	0.09
6.3	3300	12.5x14	1150	0.066
6.3	6800	16x17	1800	0.035
10	22	4x5.5	90	1.35
10	33	5x5.5	160	0.80
10	47	6.3x5.5	230	0.44
10	100	6.3x5.5	240	0.44
10	150	6.3x5.5	250	0.44
10	220	6.3x7.7	280	0.36
10	330	8x10.5	500	0.17
10	470	8x10.5	550	0.17
10	680	10x10.5	690	0.09
10	1000	10x10.5	690	0.09
10	2200	12.5x14	1150	0.066
10	4700	16x17	1800	0.035
16	10	4x5.5	90	2.10
16	22	5x5.5	150	0.80
16	33	6.3x5.5	230	0.44
16	47	6.3x5.5	230	0.44
16	100	6.3x5.5	255	0.44
16	150	6.3x7.7	280	0.36
16	220	6.3x7.7	280	0.36
16	330	8x10.5	550	0.17
16	470	8x10.5	600	0.17
16	470	10x10.5	670	0.09
16	680	10x10.5	750	0.09
16	1500	12.5x14	1150	0.066
16	3300	16x17	1800	0.035
25	10	4x5.5	90	2.10
25	22	5x5.5	150	0.80
25	33	6.3x5.5	230	0.44
25	47	6.3x5.5	230	0.44
25	100	6.3x7.7	300	0.36
25	150	8x10.5	500	0.17
25	220	8x10.5	550	0.17
25	330	8x10.5	600	0.17

VV (Vdc)	Cap (uF)	Size (mm)	Ripple current (mArms/105°C /100KHz)	Max Imp. 20°C 100KHz(Ω)
25	470	10x10.5	670	0.09
25	1000	12.5x14	1150	0.066
25	2200	16x17	1800	0.035
35	4.7	4x5.5	90	1.90
35	10	5x5.5	150	0.80
35	22	6.3x5.5	230	0.44
35	33	6.3x5.5	230	0.44
35	47	6.3x5.5	240	0.44
35	100	8x10.5	450	0.17
35	150	8x10.5	550	0.17
35	220	8x10.5	600	0.16
35	220	10x10.5	670	0.09
35	330	10x10.5	850	0.08
35	470	12.5x14	1150	0.066
35	680	12.5x14	1150	0.066
35	1000	16x17	1800	0.066
35	1500	16x17	1800	0.066
50	1	4x5.5	60	4.40
50	2.2	4x5.5	60	3.90
50	3.3	4x5.5	60	3.90
50	4.7	4x5.5	75	3.90
50	4.7	5x5.5	85	2.10
50	10	6.3x5.5	165	1.40
50	22	6.3x5.5	165	1.20
50	33	6.3x7.7	185	0.68
50	47	6.3x7.7	185	0.68
50	68	8x10.5	300	0.34
50	100	8x10.5	350	0.34
50	100	10x10.5	555	0.25
50	150	10x10.5	555	0.25
50	220	10x10.5	600	0.23
50	470	16x17	1610	0.073
50	680	16x17	1610	0.073
50	1000	16x17	1610	0.073
63	4.7	5x5.5	50	2.60
63	10	6.3x5.5	80	1.50
63	22	6.3x7.7	120	1.00
63	33	8x10.5	250	0.70
63	47	8x10.5	280	0.65
63	68	10x10.5	400	0.38
63	100	10x10.5	420	0.24
63	100	12.5x14	540	0.22
63	150	12.5x14	800	0.18
63	220	12.5x14	830	0.16
63	470	16x17	1410	0.082
80	10	6.3x7.7	60	2.60
80	22	8x10.5	130	1.70

WV (Vdc)	Cap (uF)	Size (mm)	Ripple current (mArms/105°C /100KHz)	Max Imp. 20°C 100KHz(Ω)
80	10	6.3x7.7	60	2.60
80	22	8x10.5	130	1.70
80	33	8x10.5	140	1.60
80	47	10x10.5	210	0.70
80	68	12.5x14	500	0.50
80	100	12.5x14	550	0.45
80	150	12.5x14	600	0.42
80	220	16x17	700	0.38
80	330	16x17	800	0.32
100	10	6.3x7.7	65	3.90
100	22	8x10.5	130	1.90
100	33	10x10.5	200	1.25
100	47	10x10.5	390	0.95
100	47	12.5x14	500	0.90
100	68	12.5x14	600	0.57
100	100	12.5x14	640	0.48
100	100	16x17	800	0.45

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (mArms/105°C /120Hz)
160	10	8x10.5	55
160	18	10x10.5	65
160	22	10x10.5	70
160	27	12.5x14	85
160	33	12.5x14	95
160	47	16x17	260
160	68	16x17	300
200	10	12.5x14	80
200	22	12.5x14	105
200	27	12.5x14	115
200	33	16x17	220
200	47	16x17	260
250	4.7	8x10.5	50
250	4.7	12.5x14	65
250	6.8	10x10.5	60
250	6.8	12.5x14	78
250	10	10x10.5	75
250	15	12.5x14	120
250	22	16x17	180
400	2.2	8x10.5	25
400	3.3	8x10.5	30
400	3.9	10x10.5	35
400	4.7	10x10.5	40
400	6.8	12.5x14	60
400	8.2	12.5x14	65
400	10	12.5x14	70
400	12	16x17	95
400	22	16x17	120
450	3.3	10x10.5	40
450	3.9	10x10.5	40
450	4.7	12.5x14	50
450	6.8	12.5x14	60
450	8.2	12.5x14	65
450	10	12.5x14	70
450	12	16x17	90
450	15	16x17	100