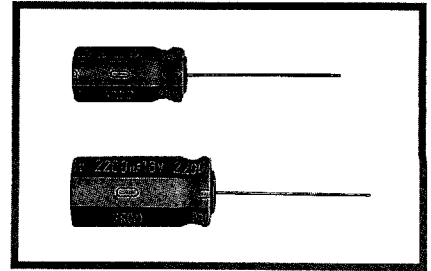
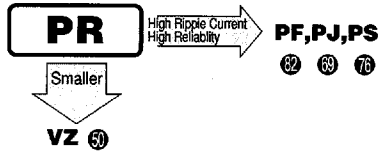


PR series Standard, For Switching Power Supplies



Smaller Low Impedance Anti-Solvent Feature (Through 100V only)

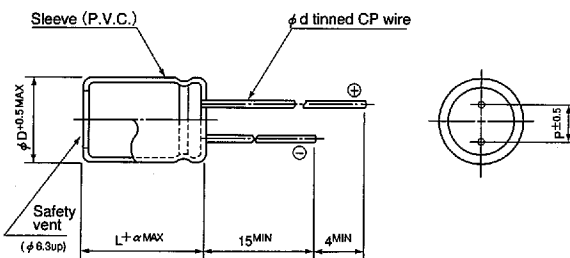
- Same case sizes as VX series, but operating at higher temperature range up to +105°C.
- Designed specifically for use in switching power supplies.



Specifications

Item	Performance Characteristics	
Operating Temperature Range	-55~+105°C (6.3~100V), -40~+105°C (160~400V), -25 ~+105°C (450V)	
Voltage Range	6.3~450V	
Capacitance Range	0.47~22000 μF	
Capacitance Tolerance	±20% at 120Hz, 20°C	
Leakage Current	Rated voltage (V)	6.3~100 160~450
	Leakage current	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.
tan δ	For capacitance of more than 1000 μF, add 0.02 for every increase of 1000 μF. Measurement frequency : 120Hz, Temperature : 20°C	
	Rated voltage (V)	6.3 10 16 25 35 50 63 100 160~250 315~350 400~450
Stability at Low Temperature	Measurement frequency : 120Hz	
	Impedance ratio	Z-25°C/Z+20°C
	ZT/Z20 (MAX.)	Z-40°C/Z+20°C
Load Life	After an application of D.C. bias voltage plus the rated ripple current for 2000 hours (1000 hours for D=8 or less) at 105°C the peak voltage shall not exceed the rated D.C. voltage, the capacitors meet the characteristic requirements shown on the right.	
	Capacitance change	tan δ
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for load life characteristics listed above.	
	Leakage current	
Marking	Printed with white color letter on dark brown sleeve.	
Applicable Standards	JIS C-5141 and JIS C-5102.	

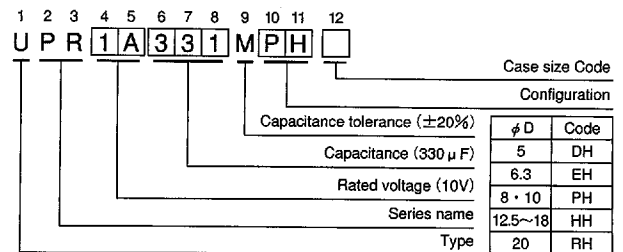
Radial Lead Type



φ D	5	6.3	8	10	12.5	16	18	20
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
φ d	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0

α	(L<20)1.5
	(L≥20)2.0

Type numbering system (Example : 10V 330 μ F)



φ D	Code
5	DH
6.3	EH
8 · 10	PH
12.5~18	HH
20	RH

• Dimension table in next page.

PR series

Standard ratings

Cap. (μF)	V (Code)	Code	Item	6.3 (0J)			10 (1A)			16 (1C)			25 (1E)		
				Case size	Impedance	Allowable ripple	Case size	Impedance	Allowable ripple	Case size	Impedance	Allowable ripple	Case size	Impedance	Allowable ripple
4.7	4R7														
10	100									5×11	2.80	35	5×11	2.80	39
22	220			5×11	2.40	34	5×11	2.40	45	5×11	2.40	55	5×11	2.40	60
33	330			5×11	2.30	50	5×11	2.30	60	5×11	2.30	70	5×11	2.20	75
47	470			5×11	2.10	65	5×11	2.10	75	5×11	1.80	85	5×11	1.60	90
100	101			5×11	1.90	100	5×11	1.80	110	6.3×11	0.80	135	6.3×11	0.62	145
220	221			6.3×11	0.67	165	6.3×11	0.58	180	8×11.5	0.36	235	8×11.5	0.35	250
330	331			6.3×11	0.48	200	8×11.5	0.36	255	8×11.5	0.32	285	10×12.5	0.22	355
470	471			8×11.5	0.31	280	8×11.5	0.26	305	10×12.5	0.20	395	10×16	0.16	470
1000	102			10×12.5	0.22	470	10×16	0.14	570	10×20	0.12	700	12.5×20	0.10	855
2200	222			12.5×20	0.096	930	12.5×20	0.090	1010	12.5×25	0.067	1150	16×25	0.053	1230
3300	332			12.5×20	0.090	1100	12.5×25	0.074	1220	16×25	0.052	1350	16×31.5	0.045	1450
4700	472			16×25	0.061	1320	16×25	0.054	1410	16×31.5	0.045	1560	•18×35.5	0.040	1660
6800	682			16×25	0.056	1490	16×31.5	0.046	1610	•18×35.5	0.040	1750	20×40	0.030	2070
10000	103			16×31.5	0.051	1830	•18×35.5	0.038	1980	△18×40	0.035	2170			
15000	153			•18×35.5	0.039	2280	△18×40	0.033	2470						
22000	223			20×40	0.030	2860									

Cap. (μF)	V (Code)	Code	Item	35 (1V)			50 (1H)			63 (1J)			100 (2A)		
				Case size	Impedance	Allowable ripple	Case size	Impedance	Allowable ripple	Case size	Impedance	Allowable ripple	Case size	Impedance	Allowable ripple
0.47	R47						5×11	47.0	7				5×11	43.0	10
1	010						5×11	22.0	12				5×11	20.0	15
2.2	2R2						5×11	10.0	18				5×11	9.80	22
3.3	3R3						5×11	6.70	25				5×11	6.60	29
4.7	4R7			5×11	5.00	27	5×11	4.70	30	5×11	4.70	34	5×11	4.60	37
10	100			5×11	2.80	44	5×11	2.20	50	5×11	2.10	55	6.3×11	1.80	65
22	220			5×11	2.30	65	5×11	1.90	75	6.3×11	0.98	90	8×11.5	0.68	115
33	330			5×11	1.90	85	6.3×11	0.84	105	6.3×11	0.71	110	10×12.5	0.46	160
47	470			6.3×11	1.00	115	6.3×11	0.80	125	8×11.5	0.65	155	10×16	0.37	210
100	101			8×11.5	0.50	190	8×11.5	0.45	210	10×12.5	0.31	260	12.5×20	0.18	385
220	221			10×12.5	0.24	325	10×16	0.21	400	10×20	0.20	465	16×25	0.10	590
330	331			10×16	0.20	440	10×20	0.19	535	12.5×20	0.12	650	16×25	0.090	720
470	471			10×20	0.12	580	12.5×20	0.10	730	12.5×25	0.081	800	16×31.5	0.076	875
1000	102			12.5×25	0.067	995	16×25	0.053	1110	16×31.5	0.049	1200	△18×40	0.047	1320
2200	222			16×31.5	0.044	1450	•18×35.5	0.037	1530	△18×40	0.032	1840			
3300	332			•18×35.5	0.038	1660	20×40	0.028	1950						
4700	472			△18×40	0.033	2030									

Case size : D×L (mm) MAX. Impedance : (Ω) at 20°C 100kHz Allowable ripple : (mA) at 105°C 120Hz

Cap. (μF)	V	Code	160		200		250		315		350		400		450	
			2 C	2 D	2 E	2 F	2 V	2 G	2 W							
0.47	R47		6.3×11	12	6.3×11	12	6.3×11	12	8×11.5	11	8×11.5	11				
1	010		6.3×11	17	6.3×11	17	6.3×11	17	8×11.5	16	10×12.5	17	10×12.5	16	10×12.5	18
2.2	2R2		6.3×11	25	6.3×11	25	8×11.5	29	10×12.5	28	10×16	31	10×16	27	10×20	29
3.3	3R3		8×11.5	36	8×11.5	36	10×12.5	42	10×12.5	34	10×16	38	10×20	36	12.5×20	41
4.7	4R7		8×11.5	43	10×12.5	50	10×12.5	50	10×16	45	10×20	49	10×20	43	12.5×20	49
10	100		10×12.5	70	10×16	80	10×20	88	10×20	72	12.5×20	82	12.5×25	72	16×25	75
22	220		10×20	130	10×20	140	12.5×25	155	12.5×25	120	16×25	130	16×25	110	16×31.5	115
33	330		12.5×20	180	12.5×25	190	12.5×25	190	16×25	155	16×31.5	160	16×31.5	140	•18×35.5	145
47	470		12.5×25	220	12.5×25	220	16×25	230	16×35.5	190	•18×35.5	200	•18×35.5	170	20×40	175
100	101		16×25	330	16×31.5	335	•18×35.5	340	△18×40	285	20×40	290				
220	221		•18×35.5	500	△18×40	515	20×40	525								Allowable ripple

Allowable Ripple (mA rms) at 105°C 120Hz

Size 20×31 is available for capacitors marked. "•"
 Size 20×35 is available for capacitors marked. "△"
 In this case, [6] will be put at 12th digit of type numbering system.

Frequency coefficient of allowable ripple current

V	Cap. (μF)	Frequency				
		50Hz	120Hz	300Hz	1kHz	10kHz~
6.3~100	~47	0.75	1.00	1.35	1.57	2.00
	100~470	0.80	1.00	1.23	1.34	1.50
	1000~22000	0.85	1.00	1.10	1.13	1.15
160~450	0.47~220	0.80	1.00	1.25	1.40	1.60