



Miniature Sized, High Ripple Current High Reliability
series



Smaller



High Ripple Current

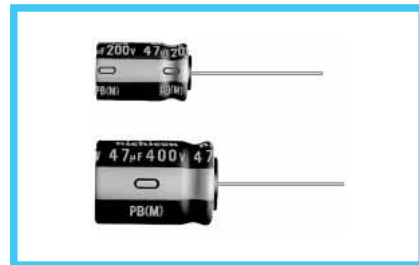
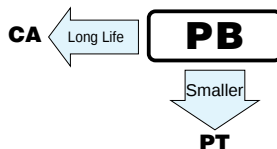


Long Life



Anti-Solvent Feature
(Through 100V only)

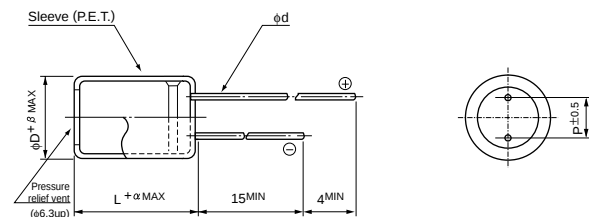
- High ripple current load life of 5000 / 7000 hours at +105°C.
- Suited for ballast application.



Specifications

Item	Performance Characteristics														
Category Temperature Range	-40 ~ +105°C (10 ~ 50V), -25 ~ +105°C (160 ~ 450V)														
Rated Voltage Range	10 ~ 450V														
Rated Capacitance Range	0.47 ~ 3300μF														
Capacitance Tolerance	±20% at 120Hz, 20°C														
Leakage Current	Rated Voltage (V)				10 ~ 50V					160 ~ 450V					
	————				After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (μA) , whichever is greater.					After 2 minutes' application of rated voltage, leakage current is not more than 0.06CV+10 (μA) , whichever is greater.					
tan δ	Measurement frequency : 120Hz, Temperature : 20°C														
	Rated voltage (V)	10	16	25	35	50	160	200	250	350	400	450			
	tan δ (MAX.)	0.30	0.25	0.22	0.18	0.15	0.15	0.15	0.15	0.20	0.24	0.24			
Stability at Low Temperature	Measurement frequency : 120Hz														
	Rated voltage (V)			10	16	25	35	50	160	200	250	350	400	450	
	Impedance ratio ZT / Z20 (MAX.)			Z-25°C / Z+20°C	3	2	2	2	2	3	3	3	4	6	6
Endurance	After an application of D.C. bias voltage plus the rated ripple current for 5000 hours (φ10 · φ12.5 (10 ~ 50V) : 7000 hours) at 105°C the peak voltage shall not exceed the rated D.C. voltage, capacitors meet the characteristic requirements listed at right.							Capacitance change		Within ±30% of initial value (10 ~ 50V) Within ±20% of initial value (160 ~ 450V)					
								tan δ		300% or less of initial specified value (10 ~ 50V) 200% or less of initial specified value (160 ~ 450V)					
								Leakage current		Initial specified value or less					
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for endurance characteritics listed above.														
Marking	Printed with white color letter on dark brown sleeve.														

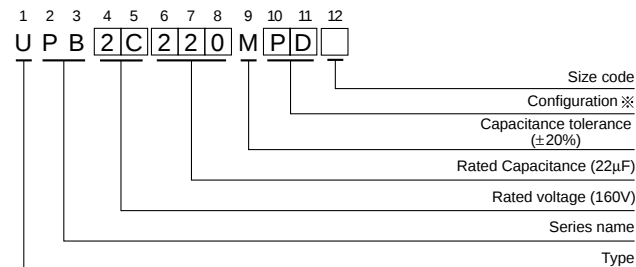
Radial Lead Type



	φD	5	6.3	8	10	12.5	16	18	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	12.5	
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	

α	(φD ≤ 18) 1.5 (φD ≥ 22) 2.0
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Type numbering system (Example : 160V 22µF)



※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve	Sn-Pb finished leadwire PVC sleeve (containing Pb)
5	DD	DH
6.3	ED	EH
8 · 10	PD	PH
12.5 ~ 18	HD	HH
22 · 25	RD	RH

※ Please contact to us if other configurations are required.

Please refer to page 19, 20, 21 about the formed or taped product spec.
Please refer to page 3 for the minimum order quantity.

• Dimension table in next page.

■ Dimensions

 $\phi D \times L$ (mm)

V		10		16		25		35		50	
Cap.(μ F)	Code	1A		1C		1E		1V		1H	
0.47	R47									5×11	5
1	010									5×11	10
2.2	2R2									5×11	15
3.3	3R3									5×11	20
4.7	4R7									5×11	25
10	100									5×11	30
22	220									5×11	40
33	330							5×11	50	6.3×11	55
47	470					5×11	55	6.3×11	60	6.3×11	65
100	101	5×11	70	6.3×11	85	6.3×11	95	8×11.5	100	8×11.5	100
220	221	6.3×11	100	8×11.5	130	8×11.5	195	10×12.5	200	10×16	235
330	331	8×11.5	150	8×11.5	195	10×12.5	255	10×16	280	10×20	295
470	471	8×11.5	180	10×12.5	270	10×16	325	10×20	350	12.5×20	370
1000	102	10×16	350	10×20	430	12.5×20	500	12.5×25	570		
2200	222	12.5×20	550	12.5×25	710						Rated ripple
3300	332	12.5×25	810							Case size	

Rated Ripple (mA rms) at 105°C 120Hz

V		160		200		250		350		400		450	
Cap.(μ F)	Code	2C		2D		2E		2V		2G		2W	
10	100							10×20	$\frac{125}{250}$	10×20	$\frac{125}{250}$	12.5×20	$\frac{150}{300}$
22	220	10×20	$\frac{250}{500}$	10×20	$\frac{250}{500}$	12.5×20	$\frac{300}{600}$	12.5×20	$\frac{175}{350}$	12.5×25	$\frac{200}{400}$	16×25	$\frac{275}{550}$
33	330	10×20	$\frac{250}{500}$	12.5×20	$\frac{300}{600}$	12.5×20	$\frac{300}{600}$	16×20	$\frac{250}{500}$	16×25	$\frac{300}{600}$	18×25	$\frac{350}{700}$
47	470	12.5×20	$\frac{300}{600}$	12.5×20	$\frac{300}{600}$	12.5×25	$\frac{350}{700}$	16×25	$\frac{325}{650}$	18×25	$\frac{375}{750}$	18×31.5	$\frac{425}{850}$
56	560											18×35.5	$\frac{475}{950}$
68	680	12.5×25	$\frac{375}{750}$	12.5×25	$\frac{375}{750}$	16×25	$\frac{500}{1000}$	18×25	$\frac{400}{800}$	18×31.5	$\frac{450}{900}$	18×40	$\frac{500}{1000}$
82	820									18×35.5	$\frac{500}{1000}$	22×40	$\frac{550}{1100}$
100	101	16×25	$\frac{550}{1100}$	16×25	$\frac{550}{1100}$	18×25	$\frac{600}{1200}$	18×31.5	$\frac{500}{1000}$	18×40	$\frac{550}{1100}$		
120	121							18×35.5	$\frac{575}{1150}$	22×40	$\frac{600}{1200}$	22×50	$\frac{700}{1400}$
150	151	18×25	$\frac{650}{1300}$	18×25	$\frac{650}{1300}$	18×31.5	$\frac{750}{1500}$	18×40	$\frac{650}{1300}$			25×50	$\frac{800}{1600}$
180	181					18×35.5	$\frac{850}{1700}$	22×40	$\frac{750}{1500}$	22×50	$\frac{800}{1600}$		
220	221			18×31.5	$\frac{850}{1700}$	18×40	$\frac{950}{1900}$			25×50	$\frac{900}{1800}$		
270	271			18×31.5	$\frac{950}{1900}$	22×40	$\frac{1050}{2100}$	22×50	$\frac{950}{1900}$				
330	331	18×31.5	$\frac{850}{1700}$	18×40	$\frac{1050}{2100}$			25×50	$\frac{1050}{2100}$				
390	391	18×35.5	$\frac{950}{1900}$	22×40	$\frac{1150}{2300}$	22×50	$\frac{1150}{2300}$						
470	471	18×40	$\frac{1050}{2100}$			25×50	$\frac{1400}{2800}$						
560	561	22×40	$\frac{1150}{2300}$	22×50	$\frac{1350}{2700}$								
680	681	22×50	$\frac{1350}{2700}$	25×50	$\frac{1500}{3000}$								
820	821	25×50	$\frac{1500}{3000}$									Case Size	Rated ripple

●: Rated ripple (mA rms) at 105°C 120Hz

△: Rated ripple (mA rms) at 105°C 100kHz

▲: In this case, ⑥ will be put at 12th digit of type numbering system.

● Frequency coefficient of rated ripple current

V	Cap.(μ F)	Frequency	50Hz	120Hz	300Hz	1kHz	10k ~ 50kHz	100kHz
10 ~ 50	0.47 ~ 10	0.47 ~ 10	0.75	1.00	1.20	1.40	1.55	1.65
		22 ~ 470	0.85	1.00	1.10	1.20	1.25	1.30
		1000 ~ 3300	0.95	1.00	1.03	1.05	1.10	1.15
160 ~ 450	10 ~ 820		0.60	1.00	1.20	1.60	1.80	2.00