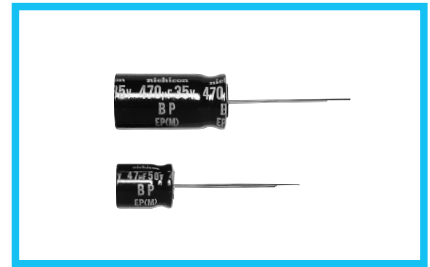
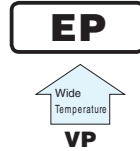


ALUMINUM ELECTROLYTIC CAPACITORS

EP series Bi-Polarized, Wide Temperature Range



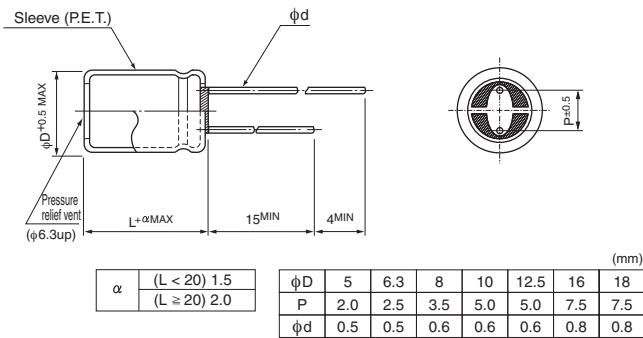
- Bi-polarized series for operations over wide temperature range of -55°C to +105°C.
- Compliant to the RoHS directive (2011/65/EU).



Specifications

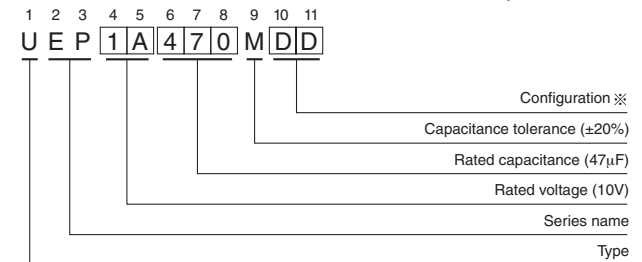
Item	Performance Characteristics									
Category Temperature Range	-55 to +105°C									
Rated Voltage Range	6.3 to 100V									
Rated Capacitance Range	0.47 to 6800μF									
Capacitance Tolerance	±20% at 120Hz, 20°C									
Leakage Current	After 5 minutes' application of rated voltage at 20°C, leakage current is not more than 0.03CV or 3 (μA), whichever is greater.									
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz, Temperature : 20°C									
	Rated voltage (V)	6.3	10	16	25	35	50	63	100	
	tan δ (MAX.)	0.24	0.24	0.20	0.20	0.16	0.14	0.12	0.10	
Stability at Low Temperature	Measurement frequency : 120Hz									
	Rated voltage (V)	6.3	10	16	25	35	50	63	100	
	Impedance ratio Z-25°C / Z+20°C	4	3	2	2	2	2	2	2	
	ZT / Z20 (MAX.)	Z-40°C / Z+20°C	10	8	6	4	3	3	3	3
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C with the polarity inverted every 250 hours.									
	Capacitance change	Within ±25% of the initial capacitance value (6.3to16V)								
	tan δ	Within ±20% of the initial capacitance value (25to100V)								
	Leakage current	150% or less than the initial specified value								
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.									
Marking	Printed with white color letter on black sleeve.									

Radial Lead Type



• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 47μF)



※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 - 10	PD
12.5 to 18	HD

Dimensions

Cap. (μF)	V	Code	6.3		10		16		25		35		50		63		100	
			0J	1A	1C	1E	1V	1H	1J	2A								
0.47	R47												5 × 11	8			5 × 11	10
1	010												5 × 11	12			5 × 11	15
2.2	2R2												5 × 11	18			6.3 × 11	20
3.3	3R3												5 × 11	22	5 × 11	20	6.3 × 11	25
4.7	4R7												5 × 11	22	6.3 × 11	31	6.3 × 11	30
10	100				5 × 11	30	5 × 11	34	5 × 11	30	6.3 × 11	37	6.3 × 11	40	8 × 11.5	50		
22	220			5 × 11	42	5 × 11	40	6.3 × 11	55	6.3 × 11	51	8 × 11.5	63	8 × 11.5	68	10 × 16	97	
33	330	5 × 11	46	5 × 11	45	5 × 11	49	6.3 × 11	56	8 × 11.5	72	8 × 11.5	77	10 × 12.5	98	12.5 × 20	140	
47	470	5 × 11	54	5 × 11	54	6.3 × 11	67	6.3 × 11	67	8 × 11.5	86	10 × 12.5	105	10 × 16	130	12.5 × 20	170	
100	101	6.3 × 11	90	6.3 × 11	90	8 × 11.5	110	8 × 11.5	110	10 × 16	160	10 × 20	190	12.5 × 20	225	16 × 25	300	
220	221	8 × 11.5	150	8 × 11.5	150	10 × 12.5	195	10 × 16	215	12.5 × 20	290	12.5 × 25	340	16 × 25	405	18 × 35.5	510	
330	331	8 × 11.5	185	10 × 16	240	10 × 16	265	12.5 × 20	320	12.5 × 20	350	16 × 25	460	16 × 31.5	535			
470	471	10 × 12.5	260	10 × 16	290	10 × 20	345	12.5 × 20	380	12.5 × 25	465	16 × 31.5	590	18 × 35.5	680			
1000	102	10 × 20	460	12.5 × 20	510	12.5 × 25	605	16 × 25	670	16 × 31.5	805							
2200	222	12.5 × 25	820	16 × 25	910	16 × 31.5	1070	18 × 35.5	1140									
3300	332	16 × 25	1110	16 × 31.5	1200	18 × 35.5	1400											
4700	472	16 × 31.5	1430	18 × 35.5	1520													
6800	682	18 × 35.5	1830															

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

Frequency coefficient of rated ripple current

Cap. (μF)	Frequency	50 Hz	120Hz	300 Hz	1 kHz	10 kHz or more
0.47 to 47		0.75	1.00	1.35	1.57	2.00
100 to 470		0.80	1.00	1.23	1.34	1.50
1000 to 6800		0.85	1.00	1.10	1.13	1.15

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.