ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

EP series

Bi-Polarized, Wide Temperature Range

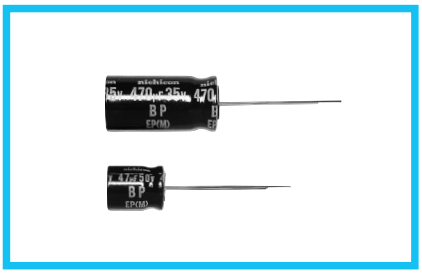
Bi-polarized Anti-Solvent Feature

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

EP

Wide Temperature

VP



■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

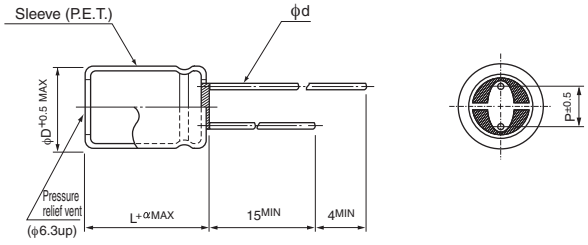
Rated voltage (V)		6.3	10	16	25	35	50	63	100
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	4	3	2	2	2	2	2	2
	Z−40°C / Z+20°C	10	8	6	4	3	3	3	3

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) Within ±20% of the initial capacitance value (25to100V)
tan δ	150% or less than the initial specified value
Leakage current	Less than or equal to 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



α	
	(L < 20) 1.5
	(L ≧ 20) 2.0

(mm)

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8

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

Type numbering system (Example : 10V 47μF)

1	2	3	4	5	6	7	8	9	10	11
U	E	P	1	A	4	7	0	M	D	D

- Configuration ※
- Capacitance tolerance (±20%)
- Rated capacitance (47μF)
- Rated voltage (10V)
- Series name
- Type

※ 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)	Code \ V	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	25	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											Case size φD × L (mm)	Rated ripple
6800	682	18 × 35.5	1830														

Rated ripple current (mArms) 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.