

UEP

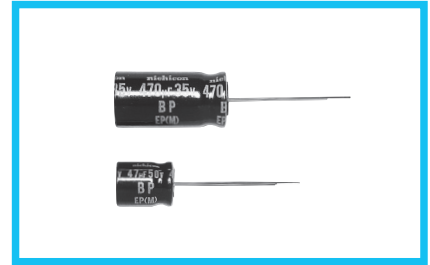
Bi-Polarized, Wide Temperature Range



- Bi-polarized series for operations over wide temperature range of -55°C to +105°C.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).

Valued marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UEP

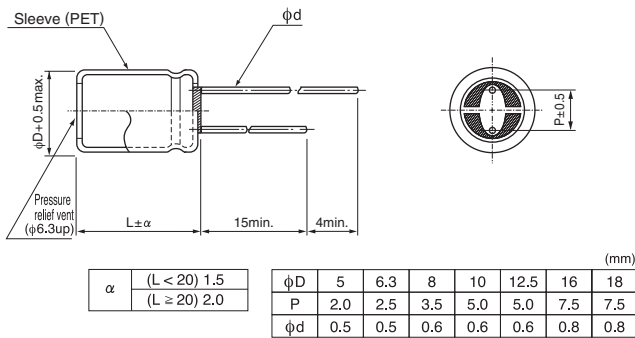


Specifications

Item	Performance Characteristics																																	
Category Temperature Range	-55 to +105°C																																	
Rated Voltage Range	6.3 to 100V																																	
Rated Capacitance Range	1 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 (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.					<table border="1"> <tr> <td>Capacitance change</td> <td colspan="5">Within ±25% of the initial capacitance value (6.3to16V)</td> </tr> <tr> <td>tan δ</td> <td colspan="5">Within ±20% of the initial capacitance value (25to100V)</td> </tr> <tr> <td>Leakage current</td> <td colspan="5">150% or less than the initial specified value</td> </tr> <tr> <td></td> <td colspan="5">Less than or equal to the initial specified value</td> </tr> </table>					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						Less than or equal to the initial specified value				
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Leakage current	150% or less than the initial specified value																																	
	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.																																	

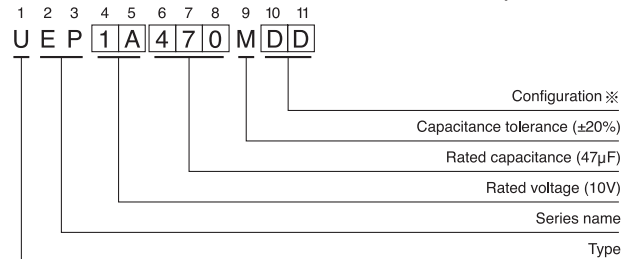
※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

Radial Lead Type



- Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

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

Frequency coefficient of rated ripple current

Cap. (μF)	Frequency	50 Hz	120Hz	300 Hz	1 kHz	10 kHz or more
1 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

● Dimension table in next page.

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■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20°C after 5 minutes)	Rated Ripple (mArms) (105°C/120Hz)	Part Number
6.3 (0J)	33	5×11	0.24	6.237	46	※UEP0J330MDD
	47	5×11	0.24	8.883	54	※UEP0J470MDD
	100	6.3×11	0.24	18.9	90	※UEP0J101MED
	220	8×11.5	0.24	41.58	150	UEP0J221MPD
	330	8×11.5	0.24	62.37	185	UEP0J331MPD
	470	10×12.5	0.24	88.83	260	UEP0J471MPD
	1000	10×20	0.24	189	460	UEP0J102MPD
	2200	12.5×25	0.26	415.8	820	UEP0J222MHD
	3300	16×25	0.28	623.7	1110	UEP0J332MHD
	4700	16×30.5	0.30	888.3	1430	UEP0J472MHD
10 (1A)	22	5×11	0.24	6.6	42	※UEP1A220MDD
	33	5×11	0.24	9.9	45	※UEP1A330MDD
	47	5×11	0.24	14.1	54	※UEP1A470MDD
	100	6.3×11	0.24	30	90	※UEP1A101MED
	220	8×11.5	0.24	66	150	UEP1A221MPD
	330	10×16	0.24	99	240	UEP1A331MPD
	470	10×16	0.24	141	290	UEP1A471MPD
	1000	12.5×20	0.24	300	510	UEP1A102MHD
	2200	16×25	0.26	660	910	UEP1A222MHD
	3300	16×30.5	0.28	990	1200	UEP1A332MHD
4700	18×35.5	0.30	1410	1520	UEP1A472MHD	
16 (1C)	10	5×11	0.20	4.8	30	※UEP1C100MDD
	22	5×11	0.20	10.56	40	※UEP1C220MDD
	33	5×11	0.20	15.84	49	※UEP1C330MDD
	47	6.3×11	0.20	22.56	67	※UEP1C470MED
	100	8×11.5	0.20	48	110	UEP1C101MPD
	220	10×12.5	0.20	105.6	195	UEP1C221MPD
	330	10×16	0.20	158.4	265	UEP1C331MPD
	470	10×20	0.20	225.6	345	UEP1C471MPD
	1000	12.5×25	0.20	480	605	UEP1C102MHD
	2200	16×30.5	0.22	1056	1070	UEP1C222MHD
3300	18×35.5	0.24	1584	1400	UEP1C332MHD	
25 (1E)	10	5×11	0.20	7.5	34	※UEP1E100MDD
	22	6.3×11	0.20	16.5	55	※UEP1E220MED
	33	6.3×11	0.20	24.75	56	※UEP1E330MED
	47	6.3×11	0.20	35.25	67	※UEP1E470MED
	100	8×11.5	0.20	75	110	UEP1E101MPD
	220	10×16	0.20	165	215	UEP1E221MPD
	330	12.5×20	0.20	247.5	320	UEP1E331MHD
	470	12.5×20	0.20	352.5	380	UEP1E471MHD
	1000	16×25	0.20	750	670	UEP1E102MHD
2200	18×35.5	0.22	1650	1140	UEP1E222MHD	

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).

If there is no size code in the part number, please add size code "1" and then add the appropriate code.

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■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20°C after 5 minutes)	Rated Ripple (mArms) (105°C/120Hz)	Part Number
35 (1V)	4.7	5×11	0.16	4.935	25	※UEP1V4R7MDD
	10	5×11	0.16	10.5	30	※UEP1V100MDD
	22	6.3×11	0.16	23.1	51	※UEP1V220MED
	33	8×11.5	0.16	34.65	72	UEP1V330MPD
	47	8×11.5	0.16	49.35	86	UEP1V470MPD
	100	10×16	0.16	105	160	UEP1V101MPD
	220	12.5×20	0.16	231	290	UEP1V221MHD
	330	12.5×20	0.16	346.5	350	UEP1V331MHD
	470	12.5×25	0.16	493.5	465	UEP1V471MHD
1000	16×30.5	0.16	1050	805	UEP1V102MHD	
50 (1H)	1	5×11	0.14	3	12	※UEP1H010MDD
	2.2	5×11	0.14	3.3	18	※UEP1H2R2MDD
	3.3	5×11	0.14	4.95	22	※UEP1H3R3MDD
	4.7	5×11	0.14	7.05	22	※UEP1H4R7MDD
	10	6.3×11	0.14	15	37	※UEP1H100MED
	22	8×11.5	0.14	33	63	UEP1H220MPD
	33	8×11.5	0.14	49.5	77	UEP1H330MPD
	47	10×12.5	0.14	70.5	105	UEP1H470MPD
	100	10×20	0.14	150	190	UEP1H101MPD
	220	12.5×25	0.14	330	340	UEP1H221MHD
	330	16×25	0.14	495	460	UEP1H331MHD
470	16×30.5	0.14	705	590	UEP1H471MHD	
63 (1J)	3.3	5×11	0.12	6.237	20	※UEP1J3R3MDD
	4.7	6.3×11	0.12	8.883	31	※UEP1J4R7MED
	10	6.3×11	0.12	18.9	40	※UEP1J100MED
	22	8×11.5	0.12	41.58	68	UEP1J220MPD
	33	10×12.5	0.12	62.37	98	UEP1J330MPD
	47	10×16	0.12	88.83	130	UEP1J470MPD
	100	12.5×20	0.12	189	225	UEP1J101MHD
	220	16×25	0.12	415.8	405	UEP1J221MHD
	330	16×30.5	0.12	623.7	535	UEP1J331MHD
470	18×35.5	0.12	888.3	680	UEP1J471MHD	
100 (2A)	1	5×11	0.10	3	15	※UEP2A010MDD
	2.2	6.3×11	0.10	6.6	20	※UEP2A2R2MED
	3.3	6.3×11	0.10	9.9	25	※UEP2A3R3MED
	4.7	6.3×11	0.10	14.1	30	※UEP2A4R7MED
	10	8×11.5	0.10	30	50	UEP2A100MPD
	22	10×16	0.10	66	97	UEP2A220MPD
	33	12.5×20	0.10	99	140	UEP2A330MHD
	47	12.5×20	0.10	141	170	UEP2A470MHD
	100	16×25	0.10	300	300	UEP2A101MHD
220	18×35.5	0.10	660	510	UEP2A221MHD	

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

• For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.