nichicon

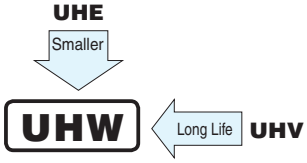
UHW

Miniature Sized, High Ripple Current, High Reliability

Smaller | Low Impedance | Long Life | Anti-Solvent Feature

Expanded

- Lower impedance at high frequency range.
- Smaller case size and high ripple current.
- Compliant to the RoHS directive (2011/65/EU).



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105°C
Rated Voltage Range	6.3 to 100V
Rated Capacitance Range	82 to 15000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minute's application of rated voltage at 20°C, leakage current is more than 0.01 CV(μA)

Tangent of loss angle (tan δ)

Rated voltage (V)	6.3	10	16	25	35	50	63	80	100
tan δ (MAX.)	0.21	0.18	0.15	0.13	0.11	0.10	0.09	0.09	0.08

Measurement frequency : 120Hz, Temperature : 20°C

For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.

Stability at Low Temperature

Rated voltage (V)		6.3	10	16	25	35	50	63	80	100
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	2	2	2	2	2	2	2	2	2
	Z−40°C / Z+20°C	3	3	3	3	3	3	3	3	3

Measurement frequency : 120Hz

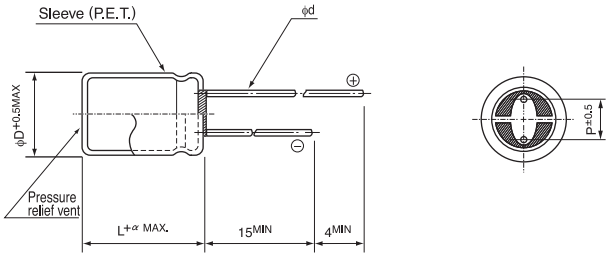
Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 10000 hours at 105°C, the peak voltage shall not exceed the rated voltage.

Capacitance Change	Within ±25% of the initial capacitance value (6.3V 10V : ±30%)
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

α	(L < 20) 1.5
	(L ≧ 20) 2.0

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.6※	0.8	0.8

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

Type numbering system (Example : 16V 2200μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	H	W	1	C	2	2	2	M	H	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (2200μF)
Rated voltage (16V)
Series name
Type

※ Configuration

φ D	Pb-free lead finishing Pb-free PET sleeve
10	PD
12.5 to 18	HD

● Frequency coefficient of rated ripple current

Cap. (μF) \ Frequency	120Hz	1kHz	10kHz	10kHz or more
82 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1800	0.60	0.87	0.95	1.00
2200 to 3900	0.75	0.90	0.95	1.00
4700 to 15000	0.85	0.95	0.98	1.00

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Dimensions

Cap.(μF)	Code	6.3 (0J) Case size φD × L (mm)	6.3 (0J) Impedance (Ω) MAX. 20˚C / 100kHz	6.3 (0J) Impedance (Ω) MAX. −10˚C / 100kHz	6.3 (0J) Rated ripple (mArms) 105˚C / 100kHz	10 (1A) Case size φD × L (mm)	10 (1A) Impedance (Ω) MAX. 20˚C / 100kHz	10 (1A) Impedance (Ω) MAX. −10˚C / 100kHz	10 (1A) Rated ripple (mArms) 105˚C / 100kHz
1200	122					10 × 16	0.030	0.090	2000
1500	152					10 × 16	0.030	0.090	2000
1800	182	10 × 16	0.030	0.090	2000	10 × 20	0.020	0.060	2500
2200	222	10 × 20	0.020	0.060	2500	10 × 25	0.017	0.051	2900
2700	272	10 × 20	0.020	0.060	2500	12.5 × 20	0.017	0.051	2600
3300	332	10 × 25	0.017	0.051	2900	12.5 × 20	0.017	0.051	2600
3900	392	12.5 × 20	0.017	0.051	2600	12.5 × 25	0.015	0.045	3200
4700	472	12.5 × 25	0.015	0.045	3200	12.5 × 31.5	0.012	0.036	3795
						▲16 × 20	0.015	0.045	3575
5600	562	12.5 × 31.5	0.012	0.036	3795	12.5 × 35.5	0.011	0.033	4120
		▲12.5 × 25	0.015	0.045	3200	▲16 × 25	0.013	0.039	3810
6800	682	12.5 × 31.5	0.011	0.033	3795	16 × 25	0.013	0.039	3810
		▲16 × 20	0.015	0.045	3575				
8200	822	16 × 25	0.013	0.039	3810	16 × 31.5	0.011	0.033	4000
10000	103	16 × 25	0.013	0.039	3810	16 × 31.5	0.011	0.033	4000
12000	123	16 × 31.5	0.011	0.033	4000	16 × 35.5	0.010	0.030	4200
15000	153	16 × 35.5	0.010	0.030	4200				

Cap.(μF)	Code	16 (1C) Case size φD × L (mm)	16 (1C) Impedance (Ω) MAX. 20˚C / 100kHz	16 (1C) Impedance (Ω) MAX. −10˚C / 100kHz	16 (1C) Rated ripple (mArms) 105˚C / 100kHz	25 (1E) Case size φD × L (mm)	25 (1E) Impedance (Ω) MAX. 20˚C / 100kHz	25 (1E) Impedance (Ω) MAX. −10˚C / 100kHz	25 (1E) Rated ripple (mArms) 105˚C / 100kHz
680	681					10 × 16	0.030	0.090	2000
820	821	10 × 16	0.030	0.090	2000	10 × 20	0.020	0.060	2500
						▲10 × 16	0.030	0.090	2000
1000	102	10 × 16	0.030	0.090	2000	10 × 20	0.020	0.060	2500
1200	122	10 × 20	0.020	0.060	2500	10 × 25	0.017	0.051	2900
		▲10 × 16	0.030	0.090	2000				
1500	152	10 × 20	0.020	0.060	2500	12.5 × 20	0.017	0.051	2600
1800	182	10 × 25	0.017	0.051	2900	12.5 × 25	0.015	0.045	3200
2200	222	12.5 × 20	0.017	0.051	2600	12.5 × 25	0.015	0.045	3200
						▲16 × 20	0.015	0.045	3575
2700	272	12.5 × 25	0.015	0.045	3200	12.5 × 31.5	0.012	0.036	3795
						▲16 × 20	0.015	0.045	3576
3300	332	12.5 × 25	0.015	0.045	3200	12.5 × 35.5	0.011	0.033	4120
		▲16 × 20	0.015	0.045	3575	▲16 × 25	0.013	0.039	3810
3900	392	12.5 × 31.5	0.012	0.036	3795	16 × 25	0.013	0.039	3810
		▲16 × 20	0.015	0.045	3575				
4700	472	12.5 × 35.5	0.011	0.033	4120	16 × 31.5	0.011	0.033	4000
		▲16 × 25	0.013	0.039	3810				
5600	562	16 × 25	0.013	0.039	3810	16 × 35.5	0.010	0.030	4200
6800	682	16 × 31.5	0.011	0.033	4000				
8200	822	16 × 35.5	0.010	0.030	4200				

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

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■Dimensions

V (Code) / Item / Code / Cap.(μF)		35 (1V)				50 (1H)			
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105℃ /100kHz	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105℃ /100kHz
			20℃ /100kHz	−10℃ /100kHz			20℃ /100kHz	−10℃ /100kHz	
220	221					10 × 16	0.042	0.126	1650
270	271					10 × 20	0.030	0.090	2060
330	331					10 × 20	0.030	0.090	2060
390	391	10 × 16	0.030	0.090	2000	10 × 25	0.028	0.084	2420
						▲10 × 20	0.030	0.090	2060
470	471	10 × 16	0.030	0.090	2000	10 × 25	0.028	0.084	2420
						▲12.5× 20	0.027	0.081	2300
560	561	10 × 20	0.020	0.060	2500	12.5× 20	0.027	0.081	2300
680	681	10 × 25	0.017	0.051	2900	12.5 × 25	0.023	0.069	2800
		▲10 × 20	0.020	0.060	2500				
820	821	10 × 25	0.017	0.051	2900	12.5 × 25	0.023	0.069	2800
		▲12.5× 20	0.017	0.051	2600	▲16 × 20	0.023	0.069	3070
1000	102	12.5× 20	0.017	0.051	2600	12.5 × 31.5	0.020	0.060	3500
						▲16 × 25	0.021	0.063	3270
1200	122	12.5× 25	0.015	0.045	3200	16 × 25	0.021	0.063	3270
1500	152	16 × 20	0.015	0.045	3575	12.5 × 35.5	0.019	0.057	3810
						▲16 × 25	0.021	0.063	3270
1800	182	12.5 × 31.5	0.012	0.036	3795	16× 31.5	0.019	0.057	3430
		▲16 × 25	0.013	0.039	3810				
2200	222	12.5 × 35.5	0.011	0.033	4120	16× 31.5	0.019	0.057	3430
		▲16 × 25	0.013	0.039	3810				
2700	272					16× 35.5	0.018	0.054	3600
3300	332	16× 31.5	0.011	0.033	4000				
3900	392	16× 35.5	0.010	0.030	4200				

V (Code) / Item / Code / Cap.(μF)		63 (1J)				80 (1K)			
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105℃ /100kHz	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105℃ /100kHz
			20℃ /100kHz	−10℃ /100kHz			20℃ /100kHz	−10℃ /100kHz	
120	121					10 × 16	0.115	0.47	1040
180	181	10 × 16	0.115	0.47	1200	10 × 20	0.088	0.34	1430
						▲12.5 × 15	0.115	0.47	1430
220	221					10 × 25	0.072	0.28	1620
270	271	10 × 20	0.088	0.34	1570	10 × 31.5	0.063	0.18	1750
						▲12.5 × 20	0.065	0.18	1750
330	331	10 × 25	0.072	0.28	1990				
390	391	10 × 31.5	0.063	0.18	2050	12.5 × 25	0.049	0.14	2210
		▲12.5 × 20	0.065	0.18	1990				
470	471					12.5 × 31.5	0.044	0.13	2400
						▲16 × 20	0.050	0.15	1950
560	561	12.5 × 25	0.049	0.14	2460	12.5 × 35.5	0.038	0.11	2600
						▲18 × 20	0.047	0.14	2270
680	681	12.5 × 31.5	0.044	0.13	2760	12.5 × 40	0.033	0.095	2860
		▲16 × 20	0.050	0.15	2380	▲16 × 25	0.040	0.12	2430
820	821	12.5 × 35.5	0.038	0.11	3040	16 × 31.5	0.033	0.095	2640
		▲18 × 20	0.047	0.14	2460	▲18 × 25	0.038	0.11	2500
1000	102	12.5 × 40	0.033	0.095	3100	16 × 35.5	0.030	0.086	2860
		▲16 × 25	0.040	0.12	2890				
1200	122	16 × 31.5	0.025	0.072	2930	16 × 40	0.028	0.081	3510
		▲18 × 25	0.038	0.11	2930	▲18 × 31.5	0.031	0.090	2860
1500	152	16 × 35.5	0.023	0.066	3100	18 × 35.5	0.028	0.081	3510
		▲18 × 31.5	0.024	0.069	3100				
1800	182	16 × 40	0.021	0.060	3510	18 × 40	0.027	0.076	3860
		▲18 × 35.5	0.022	0.063	3510				
2200	222	18 × 40	0.020	0.057	3860				

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

UHW

■Dimensions

V (Code) / Item / Code / Cap.(μF)		100 (2A)			
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)
			20℃ /100kHz	−10℃ /100kHz	105℃ /100kHz
82	82	10 × 16	0.115	0.47	1040
100	101	10 × 20	0.088	0.34	1430
		▲12.5 × 15	0.115	0.47	1430
120	121	10 × 25	0.072	0.28	1620
180	181	12.5 × 20	0.065	0.18	1750
220	221	12.5 × 25	0.049	0.14	2210
270	271	12.5 × 31.5	0.044	0.13	2400
		▲ 16 × 20	0.050	0.15	1950
390	391	12.5 × 35.5	0.038	0.11	2600
		▲ 16 × 25	0.040	0.12	2430
		※ 18 × 20	0.047	0.14	2270
470	471	12.5 × 40	0.033	0.095	2860
		▲ 18 × 25	0.038	0.11	2500
560	561	16 × 31.5	0.033	0.095	2640
680	681	16 × 35.5	0.030	0.086	2860
		▲ 18 × 31.5	0.031	0.090	2860
820	821	16 × 40	0.028	0.081	3510
		▲ 18 × 35.5	0.028	0.081	3510
1000	102	18 × 40	0.027	0.076	3860

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

※: In this case, 3 will be put at 12th digit of type numbering system.