

UHEMiniature Sized, Low Impedance,
High Reliability

Smaller



Low Impedance



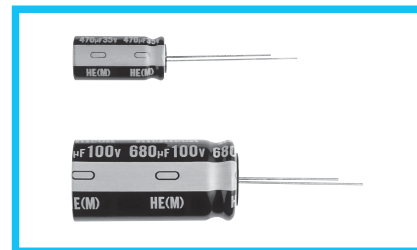
Long Life

Anti-Solvent
Feature

- Low impedance and high reliability withstanding 4000 hours to 10000 hours.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).

UHE

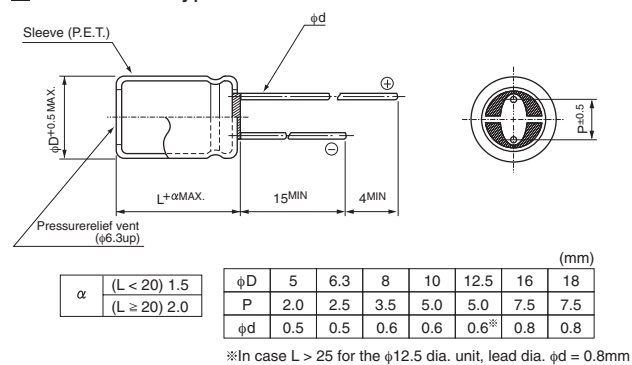
Long Life

UHD

■ Specifications

Item	Performance Characteristics									
Category Temperature Range	-40 to +105°C									
Rated Voltage Range	6.3 to 100V									
Rated Capacitance Range	2.2 to 18000μF									
Capacitance Tolerance	±20% at 120Hz, 20°C									
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.									
Tangent of loss angle (tan δ)	Rated voltage (V)	6.3	10	16	25	35	50	63	100	120Hz
	tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	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	100	120Hz
	Impedance ratio (MAX.)	Z-25°C / Z+20°C	4	3	2	2	2	2	2	
		Z-40°C / Z+20°C	8	6	4	3	3	3	3	
Endurance	The following specifications shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied at 105°C , the peak voltage shall not exceed the rated voltage.									
	Case size		φD ≤ 6.3		φD = 8 , 10		φD ≥ 12.5			
	Rated voltage (V)	6.3 to 10WV	4000 hours		6000 hours		8000 hours			
		16 to 100WV	5000 hours		7000 hours		10000 hours			
	Capacitance change		Within ±25% of the initial capacitance value							
	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

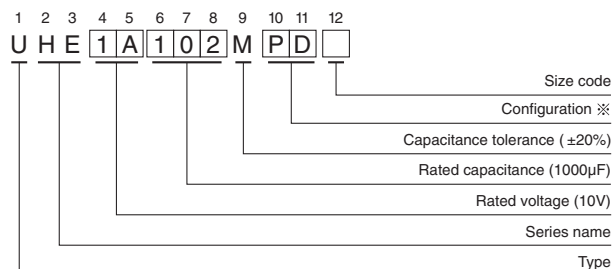


- Please refer to page 20 about the end seal configuration.

● Frequency coefficient of rated ripple current

Cap. (μF)	Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
2.2 to 33		0.45	0.55	0.70	0.90	1.00
39 to 330		0.60	0.70	0.85	0.95	1.00
390 to 1000		0.65	0.75	0.90	0.98	1.00
1200 to 18000		0.75	0.80	0.95	1.00	1.00

Type numbering system (Example : 10V 1000μF)



※ Configuration

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

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

- Dimension table in next page.

UHE

■ Dimensions

Cap.(μF)	V (Code)	Item	6.3 (0J)			10 (1A)			
			Case size φD × L (mm)	Impedance (Ω) MAX.		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz
				20°C / 100kHz	-10°C / 100kHz		20°C / 100kHz	-10°C / 100kHz	
100	101					5 × 11	0.58	2.3	210
150	151		5 × 11	0.58	2.3				
220	221					6.3 × 11	0.22	0.87	340
330	331		6.3 × 11	0.22	0.87				
470	471					8 × 11.5	0.13	0.52	640
680	681		8 × 11.5	0.13	0.52	8 × 15	0.087	0.35	840
820	821		10 × 12.5	0.080	0.32	▲ 10 × 12.5	0.080	0.32	865
1000	102		8 × 15	0.087	0.35	8 × 20	0.069	0.27	1050
						▲ 10 × 16	0.060	0.24	1210
1200	122		8 × 20	0.069	0.27	10 × 20	0.046	0.18	1400
			▲ 10 × 16	0.060	0.24				
1500	152		10 × 20	0.046	0.18	10 × 25	0.042	0.17	1650
						▲ 12.5 × 15	0.049	0.16	1450
1800	182		12.5 × 15	0.049	0.16				
2200	222		10 × 25	0.042	0.17	10 × 31.5	0.031	0.12	1910
						▲ 12.5 × 20	0.035	0.12	1900
						● 16 × 15	0.042	0.12	1940
2700	272		▲ 10 × 31.5	0.031	0.12	18 × 15	0.043	0.11	2210
			16 × 15	0.042	0.12				
3300	332		12.5 × 20	0.035	0.12	12.5 × 25	0.027	0.089	2230
3900	392		12.5 × 25	0.027	0.089	12.5 × 31.5	0.024	0.078	2650
			▲ 18 × 15	0.043	0.11	▲ 16 × 20	0.027	0.078	2530
4700	472		12.5 × 31.5	0.024	0.078	12.5 × 35.5	0.020	0.065	2880
5600	562		12.5 × 35.5	0.020	0.065	12.5 × 40	0.017	0.056	3350
			▲ 16 × 20	0.027	0.078	▲ 16 × 25	0.021	0.060	2930
						● 18 × 20	0.026	0.067	2860
6800	682		12.5 × 40	0.017	0.056	16 × 31.5	0.017	0.050	3450
			▲ 16 × 25	0.021	0.060				
			● 18 × 20	0.026	0.067	▲ 18 × 25	0.019	0.049	3140
8200	822		16 × 31.5	0.017	0.050	16 × 35.5	0.015	0.044	3610
						▲ 18 × 31.5	0.015	0.040	4170
10000	103		16 × 35.5	0.015	0.044	16 × 40	0.013	0.038	4080
			▲ 18 × 25	0.019	0.049	▲ 18 × 35.5	0.014	0.038	4220
12000	123		16 × 40	0.013	0.038	18 × 40	0.012	0.032	4280
			▲ 18 × 31.5	0.015	0.040				
15000	153		18 × 35.5	0.014	0.038				
18000	183		18 × 40	0.012	0.032				

▲: 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.

UHE

■ Dimensions

Cap. (μF)	V (Code)	Item	16 (1C)			25 (1E)			
			Case size φD × L (mm)	Impedance (Ω) MAX.		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)
				20°C / 100kHz	-10°C / 100kHz		20°C / 100kHz	-10°C / 100kHz	
47	470					5 × 11	0.58	2.3	210
56	560		5 × 11	0.58	2.3				
100	101					6.3 × 11	0.22	0.87	340
120	121		6.3 × 11	0.22	0.87				
220	221					8 × 11.5	0.13	0.52	640
330	331		8 × 11.5	0.13	0.52	8 × 15	0.087	0.35	840
						▲ 10 × 12.5	0.080	0.32	865
470	471		8 × 15	0.087	0.35	8 × 20	0.069	0.27	1050
			▲ 10 × 12.5	0.080	0.32	▲ 10 × 16	0.06	0.24	1210
680	681		8 × 20	0.069	0.27	10 × 20	0.046	0.18	1400
			▲ 10 × 16	0.060	0.24	▲ 12.5 × 15	0.049	0.16	1450
820	821					10 × 25	0.042	0.17	1650
1000	102		10 × 20	0.046	0.18	10 × 31.5	0.031	0.12	1910
			▲ 12.5 × 15	0.049	0.16	▲ 12.5 × 20	0.035	0.12	1900
						● 16 × 15	0.042	0.12	1940
1200	122		10 × 25	0.042	0.17	18 × 15	0.043	0.11	2210
1500	152		10 × 31.5	0.031	0.12				
			▲ 12.5 × 20	0.035	0.12	12.5 × 25	0.027	0.089	2230
			● 16 × 15	0.042	0.12				
1800	182					12.5 × 31.5	0.024	0.078	2650
						▲ 16 × 20	0.027	0.078	2530
2200	222		12.5 × 25	0.027	0.089	12.5 × 35.5	0.020	0.065	2880
			▲ 18 × 15	0.043	0.11	▲ 18 × 20	0.026	0.067	2860
2700	272		12.5 × 31.5	0.024	0.078	12.5 × 40	0.017	0.056	3350
			▲ 16 × 20	0.027	0.078	▲ 16 × 25	0.021	0.060	2930
3300	332		12.5 × 35.5	0.020	0.065	16 × 31.5	0.017	0.050	3450
						▲ 18 × 25	0.019	0.049	3140
3900	392		12.5 × 40	0.017	0.056	16 × 35.5	0.015	0.044	3610
			▲ 16 × 25	0.021	0.060				
			● 16 × 20	0.026	0.067	▲ 18 × 31.5	0.015	0.040	4170
4700	472		16 × 31.5	0.017	0.050	16 × 40	0.013	0.038	4080
			▲ 18 × 25	0.019	0.049	▲ 18 × 35.5	0.014	0.038	4220
5600	562		16 × 35.5	0.015	0.044	18 × 40	0.012	0.032	4280
			▲ 18 × 31.5	0.015	0.040				
6800	682		16 × 40	0.013	0.038				
8200	822		18 × 35.5	0.014	0.038				
10000	103		18 × 40	0.012	0.032				

▲ : 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.

UHE

■ Dimensions

Cap.(μF)	Item Code	V (Code)				35 (1V)				50 (1H)			
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mAmps) 105°C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mAmps) 105°C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mAmps) 105°C / 100kHz
			20°C / 100kHz	-10°C / 100kHz			20°C / 100kHz	-10°C / 100kHz			20°C / 100kHz	-10°C / 100kHz	
2.2	2R2					5 × 11	2.5	10	43				
3.3	3R3					5 × 11	2.2	8.8	53				
4.7	4R7					5 × 11	1.9	7.6	88				
10	100					5 × 11	1.5	6	100				
22	220					5 × 11	0.70	2.8	180				
33	330	5 × 11	0.58	2.3	210	6.3 × 11	0.30	1.2	295				
47	470	6.3 × 11	0.22	0.87	250	6.3 × 11	0.30	1.2	295				
56	560	6.3 × 11	0.22	0.87	340	6.3 × 11	0.30	1.2	295				
100	101	8 × 11.5	0.13	0.52	640	8 × 11.5	0.17	0.68	555				
120	121					8 × 15	0.12	0.48	730				
150	151	8 × 11.5	0.13	0.52	640	10 × 12.5	0.12	0.48	760				
180	181					8 × 20	0.091	0.36	910				
220	221	8 × 15	0.087	0.35	840	10 × 16	0.084	0.34	1050				
		▲ 10 × 12.5	0.080	0.32	865								
270	271	8 × 20	0.069	0.27	1050	10 × 20	0.060	0.24	1220				
						▲ 12.5 × 15	0.061	0.20	1260				
330	331	10 × 16	0.060	0.24	1210	10 × 25	0.055	0.22	1440				
						▲ 10 × 20	0.060	0.24	1220				
470	471	10 × 20	0.046	0.18	1400	10 × 31.5	0.043	0.17	1690				
		▲ 12.5 × 15	0.049	0.16	1450	▲ 12.5 × 20	0.045	0.15	1660				
						● 16 × 15	0.055	0.17	1690				
560	561	10 × 25	0.042	0.17	1650	12.5 × 25	0.034	0.11	1950				
						▲ 18 × 15	0.054	0.15	1930				
680	681	10 × 31.5	0.031	0.12	1910	12.5 × 31.5	0.030	0.10	2310				
		▲ 12.5 × 20	0.035	0.12	1900								
		● 16 × 15	0.042	0.12	1940								
820	821					12.5 × 35.5	0.025	0.083	2510				
						▲ 16 × 20	0.034	0.10	2210				
1000	102	12.5 × 25	0.027	0.089	2230	12.5 × 40	0.021	0.069	2920				
		▲ 18 × 15	0.043	0.11	2210	▲ 16 × 25	0.025	0.075	2555				
						● 18 × 20	0.036	0.097	2490				
1200	122	12.5 × 31.5	0.024	0.078	2650	16 × 31.5	0.022	0.066	3010				
		▲ 16 × 20	0.027	0.078	2530	▲ 18 × 25	0.026	0.070	2740				
1500	152	12.5 × 35.5	0.020	0.065	2880	16 × 35.5	0.019	0.057	3150				
1800	182	12.5 × 40	0.017	0.056	3350	16 × 40	0.016	0.048	3710				
		▲ 16 × 25	0.021	0.060	2930								
		● 18 × 20	0.026	0.067	2860								
2200	222	16 × 31.5	0.017	0.050	3450	▲ 18 × 35.5	0.017	0.046	3680				
		▲ 18 × 25	0.019	0.049	3140								
2700	272	16 × 35.5	0.015	0.044	3610	18 × 40	0.014	0.038	3800				
		▲ 18 × 31.5	0.015	0.040	4170								
3300	332	16 × 40	0.013	0.038	4080								
		▲ 18 × 35.5	0.014	0.038	4220								
3900	392	18 × 40	0.012	0.032	4280								

▲ : 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.

UHE

■ Dimensions

V (Code) Item Cap.(μF) Code		63 (1J)				100 (2A)			
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz
			20°C / 100kHz	−10°C / 100kHz			20°C / 100kHz	−10°C / 100kHz	
6.8	6R8					5 × 11	2.3	9.3	62
15	150	5 × 11	2.3	9.3	62	6.3 × 11	1.2	5.0	126
27	270					8 × 11.5	0.63	2.8	260
33	330	6.3 × 11	1.2	5.0	126				
39	390					8 × 15	0.45	2.1	335
47	470	8 × 11.5	0.63	2.8	260	10 × 12.5	0.43	1.8	325
56	560	8 × 11.5	0.63	2.8	260	8 × 20	0.33	1.6	408
68	680					10 × 16	0.31	1.5	400
82	820	8 × 15	0.45	2.1	335	10 × 20	0.21	0.94	518
		▲ 10 × 12.5	0.43	1.8	325	▲ 12.5 × 15	0.23	1.1	527
100	101					10 × 25	0.20	0.84	595
						▲ 12.5 × 20	0.20	0.84	740
120	121	8 × 20	0.33	1.6	408	10 × 31.5	0.15	0.71	740
		▲ 10 × 16	0.31	1.5	400	▲ 12.5 × 20	0.16	0.64	765
150	151					16 × 15	0.14	0.66	895
180	181	10 × 20	0.21	0.94	518	12.5 × 25	0.12	0.45	875
		▲ 12.5 × 15	0.23	1.1	527	▲ 18 × 15	0.12	0.50	1030
220	221	10 × 25	0.20	0.84	595	12.5 × 31.5	0.10	0.42	1010
						▲ 16 × 20	0.091	0.38	1130
270	271	10 × 31.5	0.15	0.71	740	12.5 × 35.5	0.083	0.35	1140
		▲ 12.5 × 20	0.16	0.64	765				
		● 16 × 15	0.14	0.66	895	▲ 16 × 25	0.073	0.27	1350
330	331	12.5 × 25	0.12	0.45	875	12.5 × 40	0.071	0.30	1280
						▲ 18 × 20	0.080	0.30	1300
390	391	18 × 15	0.12	0.50	1030	16 × 31.5	0.054	0.20	1650
						▲ 18 × 25	0.057	0.21	1560
470	471	12.5 × 31.5	0.10	0.42	1010	16 × 35.5	0.045	0.17	1900
		▲ 16 × 20	0.091	0.38	1130	▲ 18 × 31.5	0.047	0.17	1720
560	561	12.5 × 35.5	0.083	0.35	1140	16 × 40	0.040	0.15	2130
		▲ 16 × 25	0.073	0.27	1350				
680	681	12.5 × 40	0.071	0.30	1280	18 × 35.5	0.040	0.15	1890
		▲ 18 × 20	0.080	0.30	1300				
820	821	16 × 31.5	0.054	0.20	1650	18 × 40	0.036	0.13	2470
		▲ 18 × 25	0.057	0.21	1560				
1000	102	16 × 35.5	0.045	0.17	1900				
		▲ 18 × 31.5	0.047	0.17	1720				
1200	122	16 × 40	0.040	0.15	2130				
		▲ 18 × 35.5	0.040	0.15	1890				
1500	152	18 × 40	0.036	0.13	2470				

▲ : 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.