

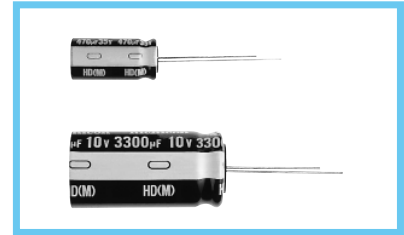
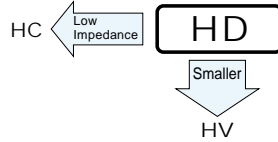
ALUMINUM ELECTROLYTIC CAPACITORS



HD High Ripple Low Impedance series



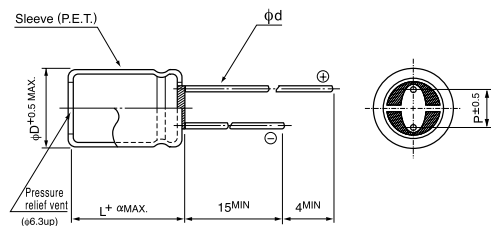
- Lower impedance at high frequency range.
- Smaller case size and high ripple current.
- Adapted to the RoHS directive (2002/95/EC).



Specifications

Item	Performance Characteristics								
Category Temperature Range	-40 ~ +105°C								
Rated Voltage Range	6.3 ~ 50V								
Rated Capacitance Range	22 ~ 6800µF								
Capacitance Tolerance	±20% at 120Hz, 20°C								
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (µA), whichever is greater.								
tan δ	Rated voltage (V)	6.3	10	16	25	35	50	120Hz 20°C	
	tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10		
	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	120Hz	
	Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	2	2	2	2	2		2
		Z-40°C / Z+20°C	3	3	3	3	3		3
Endurance	After an application of D.C. bias voltage plus the rated ripple current for 5000 hours (φD ≤ 6.3 : 2000 hours, φD=8 : 3000 hours, φD=10 : 4000 hours) at 105°C the peak voltage shall not exceed the rated D.C. voltage, capacitors meet the characteristic requirements listed below.								
	Capacitance change	Within ± 25% of initial value							
	tan δ	200% or less of initial specified value							
	Leakage current	Initial specified value or less							
Marking	Printed with white color letter on black sleeve.								

Radial Lead Type

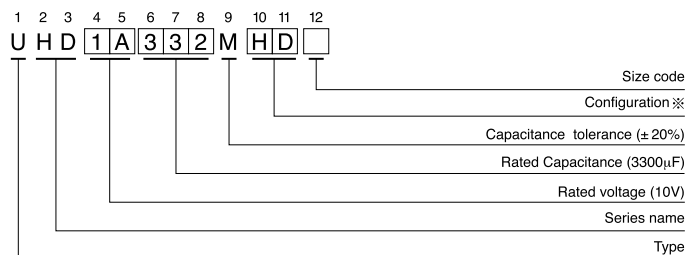


		(mm)					
α	(L < 20)	1.5					
	(L ≥ 20)	2.0					
	φD	5	6.3	8	10	12.5	16
	P	2.0	2.5	3.5	5.0	5.0	7.5
	φd	0.5	0.5	0.6	0.6	*0.6	0.8

*In case L > 25 for the φ12.5 dia. unit, lead dia. φd = 0.8mm.

- Please refer to page 21 about the end seal configuration.

Type numbering system (Example : 10V 3300µF)



※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8-10	PD
12.5-16	HD

Please refer to page 21, 22, 23 about the formed or taped product spec.
Please refer to page 3 for the minimum order quantity.

● Dimension table in next page.

CAT.8100V

Standard ratings

V(Code)		6.3 (0J)				10 (1A)			
Cap.(μ F)	Item Code	Case size ϕ D \times L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz	Case size ϕ D \times 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 \times 11	0.30	1.0	250
150	151	5 \times 11	0.30	1.0	250				
220	221					6.3 \times 11	0.13	0.41	405
330	331	6.3 \times 11	0.13	0.41	405				
470	471					8 \times 11.5	0.072	0.22	760
560	561	8 \times 11.5	0.072	0.22	760				
680	681					8 \times 15 ▲ 10 \times 12.5	0.056 0.053	0.17 0.16	995 1030
820	821	8 \times 15	0.056	0.17	995				
1000	102	10 \times 12.5	0.053	0.16	1030	8 \times 20 ▲ 10 \times 16	0.041 0.038	0.13 0.12	1250 1430
1200	122	8 \times 20 ▲ 10 \times 16	0.041 0.038	0.13 0.12	1250 1430	10 \times 20	0.023	0.069	1820
1500	152	10 \times 20	0.023	0.069	1820	10 \times 25	0.022	0.066	2150
2200	222	10 \times 25	0.022	0.066	2150	12.5 \times 20	0.021	0.053	2360
3300	332	12.5 \times 20	0.021	0.053	2360	12.5 \times 25	0.018	0.045	2770
3900	392	12.5 \times 25	0.018	0.045	2770	12.5 \times 31.5 ▲ 16 \times 20	0.016 0.018	0.041 0.045	3290 3140
4700	472	12.5 \times 31.5	0.016	0.041	3290	12.5 \times 35.5	0.015	0.039	3400
5600	562	12.5 \times 35.5 ▲ 16 \times 20	0.015 0.018	0.039 0.045	3400 3140	16 \times 25	0.016	0.043	3460
6800	682	16 \times 25	0.016	0.043	3460				

V(Code)		16 (1C)				25 (1E)			
Cap.(μ F)	Item Code	Case size ϕ D \times L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz	Case size ϕ D \times L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz
			20°C / 100kHz	-10°C / 100kHz			20°C / 100kHz	-10°C / 100kHz	
47	470					5 \times 11	0.30	1.0	250
56	560	5 \times 11	0.30	1.0	250				
100	101					6.3 \times 11	0.13	0.41	405
120	121	6.3 \times 11	0.13	0.41	405				
220	221					8 \times 11.5	0.072	0.22	760
330	331	8 \times 11.5	0.072	0.22	760	8 \times 15 ▲ 10 \times 12.5	0.056 0.053	0.17 0.16	995 1030
470	471	8 \times 15 ▲ 10 \times 12.5	0.056 0.053	0.17 0.16	995 1030	8 \times 20 ▲ 10 \times 16	0.041 0.038	0.13 0.12	1250 1430
680	681	8 \times 20 ▲ 10 \times 16	0.041 0.038	0.13 0.12	1250 1430	10 \times 20	0.023	0.069	1820
820	821					10 \times 25	0.022	0.066	2150
1000	102	10 \times 20	0.023	0.069	1820	12.5 \times 20	0.021	0.053	2360
1200	122	10 \times 25	0.022	0.066	2150				
1500	152	12.5 \times 20	0.021	0.053	2360	12.5 \times 25	0.018	0.045	2770
1800	182					12.5 \times 31.5 ▲ 16 \times 20	0.016 0.018	0.041 0.045	3290 3140
2200	222	12.5 \times 25	0.018	0.045	2770	12.5 \times 35.5	0.015	0.039	3400
2700	272	12.5 \times 31.5 ▲ 16 \times 20	0.016 0.018	0.041 0.045	3290 3140	16 \times 25	0.016	0.043	3460
3300	332	12.5 \times 35.5	0.015	0.039	3400				
3900	392	16 \times 25	0.016	0.043	3460				

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

Standard ratings

Cap. (μF)	V (Code) Item Code	35 (1V)				50 (1H)			
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mA rms) 105°C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mA rms) 105°C / 100kHz
			20°C / 100kHz	-10°C / 100kHz			20°C / 100kHz	-10°C / 100kHz	
22	220					5 × 11	0.34	1.18	238
33	330	5 × 11	0.30	1.0	250				
56	560	6.3 × 11	0.13	0.41	405	6.3 × 11	0.14	0.50	385
100	101					8 × 11.5	0.074	0.22	724
120	121					8 × 15	0.061	0.18	950
150	151	8 × 11.5	0.072	0.22	760	10 × 12.5	0.061	0.18	979
180	181					8 × 20	0.046	0.14	1190
220	221	8 × 15	0.056	0.17	995	10 × 16	0.042	0.12	1370
		▲10 × 12.5	0.053	0.16	1030				
270	271	8 × 20	0.041	0.13	1250	10 × 20	0.030	0.090	1580
330	331	10 × 16	0.038	0.12	1430	10 × 25	0.028	0.085	1870
470	471	10 × 20	0.023	0.069	1820	12.5 × 20	0.027	0.068	2050
560	561	10 × 25	0.022	0.066	2150	12.5 × 25	0.023	0.059	2410
680	681	12.5 × 20	0.021	0.053	2360	12.5 × 31.5	0.021	0.052	2860
820	821					12.5 × 35.5	0.019	0.051	2960
						▲16 × 20	0.023	0.059	2730
1000	102	12.5 × 25	0.018	0.045	2770	16 × 25	0.021	0.056	3010
1200	122	12.5 × 31.5	0.016	0.041	3290				
		▲16 × 20	0.018	0.045	3140				
1500	152	12.5 × 35.5	0.015	0.039	3400				
1800	182	16 × 25	0.016	0.043	3460				

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

Frequency coefficient of rated ripple current

Cap. (μF)	Frequency	50Hz	120Hz	1kHz	10kHz	100kHz
22 ~ 33		0.45	0.55	0.75	0.90	1.00
39 ~ 330		0.60	0.70	0.85	0.95	1.00
390 ~ 1000		0.65	0.75	0.90	0.98	1.00
1200 ~ 6800		0.75	0.80	0.95	1.00	1.00