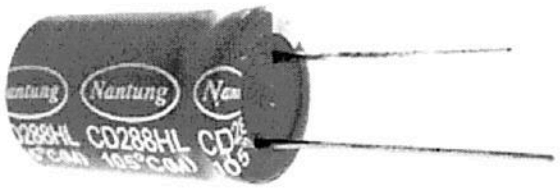
CD288HL SERIES

ALUMINUM ELECTROLYTIC CAPACITORS

- Load life of 3000 hours at 105°C
- High frequency and low impedance, wide temperature, long life, small size.



▪ SPECIFICATIONS

Item	Characteristics		
Operating Temperature Range(°C)	-55~+105	-40~+105	-25~+105
Rated Voltage Range (V)	6.3~100	160~400	450
Nominal capacitance range (uF)		0.47~15000	
Capacitance Tolerance(20°C,120Hz)		+/-20%	
Leakage current (uA)	6.3~100V I<=0.03 or 4 (Whichever is greater) C: Nominal Capacitance (uF) V: Rated Voltage (V)		160~450V CV<=1000: I<=0.1CV+40 CV>1000: I<=0.04CV+100 C: Nominal Capacitance (uF) V: Rated Voltage (V)

Dissipation Factor(20°C,120Hz)

Rated Voltage (V)	6.3	10	16	25	35	50	63	100	160~250	315~350	400~450
D.F.	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20	0.25

when nominal capacitance is over 1000uF D.F. shall be added 0.02 to the listed value with increase of every 1000 uF

Temperature Stability(120Hz)

Rated Voltage (V)		6.3~100	160~200	250	315~350	400	450
Impedance Ratio	Z-40°C/Z+20°C	-	3	3	4	6	15
	Z-25°C/Z+20°C	-	4	6	8	10	-

Load Life(+105°C)

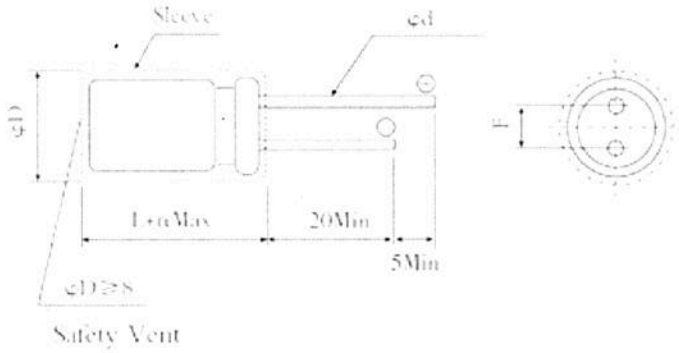
Time	3000 hours(D=5,6.3,8: 2000hrs).
Leakage Current	Not more than the specified value.
Capacitance Change	Within +/-20% of the initial value.
Dissipation Factor	Not more than 200% of the specified value.

Shelf Life(+105°C)

Time	1000 hours.
Leakage Current	Not more than the specified value.
Capacitance Change	Within +/-20% of the initial value.
Dissipation Factor	Not more than 200% of the specified value.

After test: Rated voltage to be applied for 30 minutes, 24 to 48 hours before measurement.

▪ DIMENSIONS MM



Lead spacing and diameter

Frequency coefficient

Rated Voltage (V)	Freq(Hz) / C(uF)	50.60	100	1K	10K-
6.3~100	~47	0.20	0.30	0.80	1.00
	68~330	0.55	0.65	0.85	1.00
	390~1000	0.70	0.75	0.90	1.00
	1200~15000	0.80	0.85	1.20.95	1.00

D	+/-0.5			+/-1.0			
	5	6.3	8	10,12.5	14,16,18	20,22	26
F+/-0.5	2.0	2.5	3.5	5.0	7.5	10.0	12.5
d+/-0.1	0.5			0.6	0.8		
a	0~+2.0						

160~450	330~470	0.90	1.00	1.13	1.15

■ STANDARD RATINGS

WV	6.3			10			16			25		
Cap	Size	Impedance	Ripple	Size	Impedance	Ripple	Size	Impedance	Ripple	Size	Impedance	Ripple
(uF)	DxL(mm)	Z(Ohm)	(mA)	DxL(mm)	Z(Ohm)	(mA)	DxL(mm)	Z(Ohm)	(mA)	DxL(mm)	Z(Ohm)	(mA)
4.7										5X11	0.600	180
10							5X11	0.600	180	5X11	0.600	180
22	5X11	0.600	180	5X11	0.600	180	5X11	0.600	180	5X11	0.600	180
33	5X11	0.600	180	5X11	0.600	180	5X11	0.600	180	5X11	0.600	180
39										5X11	0.650	175
47	5X11	0.600	180	5X11	0.600	180	5X11	0.600	180	5X11	0.600	180
56							5X11	0.650	175			
82				5X11	0.650	175				6.3X11	0.350	290
100	5X11	0.650	175	5X11	0.600	180	6.3X11	0.250	290	6.3X11	0.250	290
120							6.3X11	0.250	290	8X11.5	0.250	400
150	6.3X11	0.250	280	6.3X11	0.250	290	6.3X11	0.250	290	8X11.5	0.117	555
180				6.3X11	0.250	290	8X11.5	0.230	400			
220	6.3X11	0.250	290	6.3X11	0.250	290	8X11.5	0.117	555	8X11.5	0.117	555
330	8X11.5	0.250	290	8X11.5	0.170	488	8X11.5	0.117	555	10X12.5	0.090	755
470	8X11.5	0.170	488	8X11.5	0.117	555	10X12.5	0.090	755	10X16 8x20	0.068	1050
560	8X11.5	0.117	555							10X20	0.052	1220
680	10X12.5	0.120	613	10X12.5	0.090	755	10X16	0.068	1050	10X20	0.052	1220
820	8X16	0.085	730				10X20	0.052	1220	10X25	0.045	1440
1000	10X12.5	0.090	755	10X16	0.068	1050	10X20	0.052	1220	12.5X20	0.038	1655
1200	8X20	0.065	995	10X20	0.052	1220	10X25	0.045	1440			
1500	10X20	0.052	1220	10X20	0.052	1220	12.5X20	0.038	1655	16X25	0.022	1950
1800										14X31.5	0.025	2310
2200	12.5X20	0.045	1400	12.5X20	0.038	1655	12.5X25	0.030	1945	16X25	0.026	2390
2700	10X25	0.035	1815	12.5X25	0.030	1945	14X25	0.025	2310	16X25	0.022	2555
3300	12.5X20	0.038	1655	12.5X25	0.030	1945	16X25	0.026	2390	16X31.5	0.018	3010
3900	12.5X25	0.030	1945	14X31.5	0.022	2510	16X25	0.022	2555	16X35.5	0.016	3150
4700	16X25	0.028	2220	16X25	0.022	2120	16X31.5	0.018	3010	18X35.5	0.015	3680
5600	14X31.5	0.022	2510	16X25	0.022	2555	16X35.5	0.016	3150			
6800	16X25	0.022	2555	16X31.5	0.018	3010	18X35.5	0.015	3680	18X40	0.014	3800
8200	16X31.5	0.018	3010	16X35.5	0.016	3150	18X35.5	0.015	3680			
10000	16X31.5	0.020	3150	18X35.5	0.015	3680	18X40	0.014	3800			
12000	18X31.5	0.016	3635									
15000	18X35.5	0.015	3680	18X40	0.014	3800						

WV(V)	35			50			63			100		
	Size	Impedance	Ripple	Size	Impedance	Ripple	Size	Impedance	Ripple	Size	Impedance	Ripple
Cap(uF)	DxL(mm)	Z(Ohm)	(mA)	DxL(mm)	Z(Ohm)	(mA)	DxL(mm)	Z(Ohm)	(mA)	DxL(mm)	Z(Ohm)	(mA)
0.47				5X11	5.000	25				5X11	43.000	20

1				5X11	3.500	40				5X11	20.000	30
2.2				5X11	3.000	55				5X11	9.800	44
3.3				5X11	2.600	65				5X11	6.600	58
4.7	5X11	0.600	180	5X11	2.300	90	5X11	4.700	68	5X11	4.600	74
6.8							5X11	2.500	95	5X11	3.500	95
10	5X11	0.600	180	5X11	1.400	120	5X11	2.100	110	6.3X11	1.800	130
12							5X11	2.000	145			
15							6.3X11	1.200	160	8X11.5	0.830	180
18				5x11	1.300	120				8X11.5	0.800	200
22	5X11	0.600	180	5X11	1.200	170	6.3X11	0.710	250	8X11.5	0.680	330
27	5X11	0.650	175									
33	5X11	0.600	180	6.3X11	0.430	300	6.3X11	0.710	250	10X12.5	0.460	320
39							8X11.5	0.700	330			
47	6.3X11	0.250	290	6.3X11	0.430	300	8X11.5	0.342	360	10X16	0.370	420
56	6.3X11	0.250	290	8X11.5	0.400	360						
68							8X11.5	0.342	405	10X20	0.300	490
82	8X11.5	0.200	400	8X11.5	0.234	485				10X25	0.250	540
100	8X11.5	0.117	555	8X11.5	0.234	485	10X12.5	0.256	535	12.5X20	0.180	580
120				8X16	0.155	635	10X16	0.194	600			
150	8X11.5	0.117	555	10X12.5	0.162	615	10X16	0.194	660	12.5X25	0.130	710
180				8X20	0.120	860	10X20	0.147	885	14X31.5	0.120	790
220	10X12.5	0.090	755	10X16	0.119	850	10X20	0.200	700	16X25	0.100	890
270				10X25	0.082	1200	12.5X20	0.090	1410			
330	10X16	0.068	1050	10X20	0.090	1010	12.5X20	0.085	1285	16X25	0.090	1080
390	10X20	0.052	1220	12.5X20	0.063	1480	12.5X25	0.070	1720	18X25	0.083	1260
470	10X20	0.052	1220	12.5X20	0.060	1500	12.5X25	0.070	1470	16X31.5	0.076	1310
560	10X25	0.045	1440	12.5X25	0.050	1832				18X31.5	0.068	1370
680	12.5X20	0.038	1655	12.5X25	0.050	1470	16X25	0.050	2160	18X35.5	0.064	1410
820				14X31.5	0.034	2285	16X31.5	0.043	2670			
1000	12.5X25	0.030	1945	16X25	0.034	2235	16X31.5	0.043	2340	18X40	0.047	1520
1200	14X25	0.025	2310	16X31.5	0.028	2700	18X31.5	0.032	2950			
1500	16X25	0.026	2390	16X31.5	0.026	1970	18X35.5	0.030	3095			
1800	16X25	0.022	2555	18X31.5	0.025	3000						
2200	16X31.5	0.018	3010	18X35.5	0.023	3100	18X40	0.028	3200			
2700	16X35.5	0.016	3150									
3300	18X35.5	0.015	3680									
4700	18X40	0.014	3800									

WV	160		200		250		315		350		400		450	
Cap	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
(uF)	DxL(mm)	(mA)	DxL(mm)	(mA)	DxL(mm)	(mA)	DxL(mm)	(mA)	DxL(mm)	(mA)	DxL(mm)	(mA)	DxL(mm)	(mA)
0.47	6.3X11	12	6.3X11	12	6.3X11	12	8X11.5	11	8X11.5	11				
1	6.3X11	17	6.3X11	17	6.3X11	17	8X11.5	16	10X12.5	17	10X12.5	16	10X12.5	18
2.2	6.3X11	25	6.3X11	25	8X11.5	29	10X12.5	28	10X16	31	10X16	27	10X20	29
3.3	8X11.5	36	8X11.5	36	10X12.5	42	10X12.5	34	10X16	38	10X20	36	12.5X20	41

4.7	8X11.5	45	10X12.5	50	10X12.5	50	10X16	45	10X20	49	10X20	45	12.5X20	49
10	10X12.5	70	10X16	80	10X20	88	10X20	72	12.5X20	82	12.5X20	72	16X25	75
22	10X20	130	10X20	140	12.5X25	155	12.5X25	120	16X25	130	16X25	110	16X31.5	115
33	12.5X20	180	12.5X25	190	12.5X25	190	16X25	155	16X31.5	160	16X31.5	140	18X35.5	145
47	12.5X25	220	12.5X25	220	16X25	230	16X35.5	190	18X35.5	200	18X35.5	170	20X40	175
100	16X25	330	16X31.5	335	18X35.5	340	18X40	285	20X40	290	22X50	350	26X50	350
220	18X35.5	500	18X40	515	20X40	525	22X50	540	26X50	550				
330	20X40	900	22X40	1100	22X50	1150								
470	22X50	1200	22X50	1300	26X50	1350								

Ripple Current: 105 ^{o}C ,100 or 120Hz; Impedance: 20^{o}C,100KHz

The specific capacitance and case size are available on request.

How to order - part numbering system