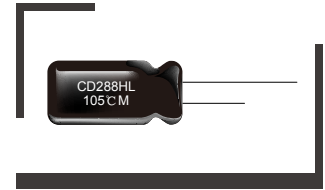


CD288HL 型铝电解电容器

CD288HL Series Aluminum Electrolytic Capacitor

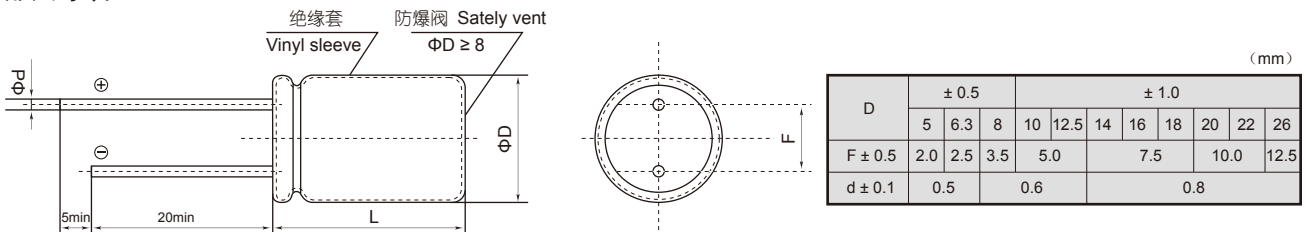


- ▶ +105°C, 3000小时 Load life of 3000 hours at +105°C
- ▶ 宽温度产品, 体积小, 容量大 Wide temperature range, Small size, Large capacitance.
- ▶ 频率特性好, 适用于高频低阻抗电路
Excellent frequency used in high frequency and low impedance.

主要技术性能 Specifications

项目 Item	特性 Characteristics																																																																		
使用温度范围 Operating temperature range (°C)	-55 ~ +105 (6.3V - 100V)	-40 ~ +105 (160V - 400V)	-25 ~ +105 (450V)																																																																
额定电压范围 Rated voltage range (V)	6.3 ~ 45																																																																		
标称容量范围 Nominal capacitance range (μF)	0.47 ~ 15000																																																																		
标称容量允许偏差 Capacitance tolerance (%)	±20 (20°C, 120Hz)																																																																		
漏电量 Leakage current (μA)	6.3 ~ 100 I ≤ 0.03C _R U _R 或 (or) 4 (取较大者 Whichever is greater)		160 ~ 450 C _R U _R ≤ 1000: I ≤ 0.1C _R U _R + 40 C _R U _R > 1000: I ≤ 0.04C _R U _R + 100																																																																
损耗角正切值 Dissipation factor (tgδ) (20°C, 120Hz)	<table border="1"> <tr> <th>U_R (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160-250</th> <th>315-350</th> <th>400-450</th> </tr> <tr> <td>tgδ (max)</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> <td>0.15</td> <td>0.20</td> <td>0.25</td> </tr> </table> <p>容量大于1000 μF者, 每增加1000 μF, 其损耗角正切值增加0.02。 0.02 is added to every 1000 μF increase over 1000 μF.</p>			U _R (V)	6.3	10	16	25	35	50	63	100	160-250	315-350	400-450	tgδ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20	0.25																																								
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温度特性 Temperature characteristics (120Hz)	<table border="1"> <tr> <th>U_R (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>315</th> <th>350</th> <th>400</th> <th>450</th> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>3</td> <td>3</td> <td>4</td> <td>6</td> <td>15</td> <td>-</td> <td>-</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>4</td> <td>6</td> <td>8</td> <td>10</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Z-55°C/Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </table> <p>容量大于1000 μF者, 每增加1000 μF, Z-25°C/Z+20增加0.5; Z-40°C/Z+20增加1; Z-55°C/Z+20增加1.5。 Z-25°C/Z+20:0.5 is added, Z-40°C/Z+20:1 is added, Z-55°C/Z+20: 1.5 is added to every 1000 μF increase over 1000 μF.</p>			U _R (V)	6.3	10	16	25	35	50	63	100	160	200	250	315	350	400	450	Z-25°C/Z+20°C	-	-	-	-	-	-	-	-	3	3	4	6	15	-	-	Z-40°C/Z+20°C	-	-	-	-	-	-	-	-	4	6	8	10	-	-	-	Z-55°C/Z+20°C	8	6	4	3	-	-	-	-	-	-	-	-	-	-	-
U _R (V)	6.3	10	16	25	35	50	63	100	160	200	250	315	350	400	450																																																				
Z-25°C/Z+20°C	-	-	-	-	-	-	-	-	3	3	4	6	15	-	-																																																				
Z-40°C/Z+20°C	-	-	-	-	-	-	-	-	4	6	8	10	-	-	-																																																				
Z-55°C/Z+20°C	8	6	4	3	-	-	-	-	-	-	-	-	-	-	-																																																				
耐久性 Load life (+105°C)	<table border="1"> <tr> <td>时间 Time</td> <td>3000小时 3000 hours(Φ5,6.3,8:200 hours)</td> </tr> <tr> <td>容量变化率 Capacitance change</td> <td>±20%初始测量值以内 ±20% of the Initial value</td> </tr> <tr> <td>漏电流 Leakage current</td> <td>≤初始规定值 Not more than the Initial specified value</td> </tr> <tr> <td>损耗角正切值 Dissipation factor</td> <td>≤200%初始规定值 Not more than 200% of the Initial specified value</td> </tr> </table>			时间 Time	3000小时 3000 hours(Φ5,6.3,8:200 hours)	容量变化率 Capacitance change	±20%初始测量值以内 ±20% of the Initial value	漏电流 Leakage current	≤初始规定值 Not more than the Initial specified value	损耗角正切值 Dissipation factor	≤200%初始规定值 Not more than 200% of the Initial specified value																																																								
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高温贮存 Shelf life (+105°C)	<table border="1"> <tr> <td>时间 Time</td> <td>1000小时 1000 hours</td> </tr> <tr> <td>容量变化率 Capacitance change</td> <td>±20%初始测量值以内 Within ±20% of the Initial value</td> </tr> <tr> <td>漏电流 Leakage current</td> <td>≤初始规定值 Not more than the Initial specified value</td> </tr> <tr> <td>损耗角正切值 Dissipation factor</td> <td>≤200%初始规定值 Not more than 200% of the Initial specified value</td> </tr> </table> <p>试验后: 施加额定电压30分钟, 于24至48小时之间测试。 After test: U_R to be applied for 30 minutes, 24 to 48 hours before measurement.</p>			时间 Time	1000小时 1000 hours	容量变化率 Capacitance change	±20%初始测量值以内 Within ±20% of the Initial value	漏电流 Leakage current	≤初始规定值 Not more than the Initial specified value	损耗角正切值 Dissipation factor	≤200%初始规定值 Not more than 200% of the Initial specified value																																																								
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外形尺寸表 Case size table



允许纹波电流的频率修正系数 Temperature Coefficient of allowable ripple current

U _R (V)	频率 (Hz)				
	C _R (μF)	50	100 (120)	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	0.95	1.00
160~450	0.47~220	0.80	1.00	1.40	1.60
	330~470	0.90	1.00	1.13	1.15



CD288HL 型铝电解电容器

CD288HL Series Aluminum Electrolytic Capacitor

标称电容量、额定电压、阻抗、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, impedance, rated ripple current and case size table

U _R (V)		6.3 (0J)				10 (1A)			
C _R (μF)		ΦDxL (mm)	Z (Ω)		I _r (mA) 105°C/100KHz	ΦDxL (mm)	Z (Ω)		I _r (mA) 105°C/100KHz
			20°C/100KHz	-10°C/100KHz			20°C/100KHz	-10°C/100KHz	
22	(220)	5x11	0.600	1.200	180	5x11	0.600	1.200	180
33	(330)	5x11	0.600	1.200	180	5x11	0.600	1.200	180
47	(470)	5x11	0.600	1.200	180	5x11	0.600	1.200	180
82	(820)					5x11	0.650	1.300	175
100	(101)	5x11	0.600	1.300	175	5x11	0.600	1.200	180
150	(151)	6.3x11	0.250	0.500	280	6.3x11	0.250	0.500	290
180	(182)					6.3x11	0.250	0.500	290
220	(221)	6.3x11	0.250	0.500	290	6.3x11	0.250	0.500	290
330	(331)	8x11.5	0.250	0.500	290	8x11.5	0.170	0.340	488
470	(471)	8x11.5	0.170	0.340	488	8x11.5	0.117	0.234	555
560	(561)	8x11.5	0.117	0.234	555				
680	(681)	10x12.5	0.120	0.240	613	10x12.5	0.090	0.180	755
820	(821)	8x16	0.085	0.170	730				
1000	(102)	10x12.5	0.090	0.180	755	10x16	0.068	0.136	1050
1200	(122)	8x20	0.065	0.130	995	10x20	0.052	0.104	1220
1500	(152)	10x20	0.052	0.104	1220	10x20	0.052	0.104	1220
2200	(222)	12.5x20	0.045	0.090	1400	12.5x20	0.038	0.076	1655
2700	(272)	10x25	0.035	0.070	1815	12.5x25	0.030	0.060	1945
3300	(332)	12.5x20	0.038	0.076	1655	12.5x25	0.030	0.060	1945
3900	(392)	12.5x25	0.030	0.060	1945	14x31.5	0.022	0.044	2510
4700	(472)	16x25	0.028	0.056	2220	16x25	0.022	0.044	2120
5600	(562)	14x31.5	0.022	0.044	2510	16x25	0.022	0.044	2555
6800	(682)	16x25	0.022	0.044	2555	16x31.5	0.018	0.036	3010
8200	(822)	16x31.5	0.018	0.036	3010	16x35.5	0.016	0.032	3150
10000	(103)	16x31.5	0.020	0.040	3150	18x35.5	0.015	0.030	3680
12000	(123)	18x31.5	0.016	0.032	3635				
15000	(153)	18x35.5	0.015	0.030	3680	18x40	0.014	0.028	3800



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Ur (V)		16 (1C)				25 (1E)			
Cr (μF)		ΦDxL (mm)	Z(Ω)		I _r (mA) 105°C/100KHz	ΦDxL (mm)	Z(Ω)		I _r (mA) 105°C/100KHz
			20°C/100KHz	-10°C/100KHz			20°C/100KHz	-10°C/100KHz	
4.7	(4R7)					5x11	0.600	1.200	180
10	(100)	5x11	0.600	1.200	180	5x11	0.600	1.200	180
22	(220)	5x11	0.600	1.200	180	5x11	0.600	1.200	180
33	(330)	5x11	0.600	1.200	180	5x11	0.600	1.200	180
39	(390)					5x11	0.650	1.200	175
47	(470)	5x11	0.600	1.200	180	5x11	0.600	1.200	180
56	(560)	5x11	0.650	1.300	175				
82	(820)					6.3x11	0.350	0.700	290
100	(101)	6.3x11	0.250	0.500	290	6.3x11	0.250	0.500	290
120	(121)	6.3x11	0.250	0.500	290	8x11.5	0.250	0.500	400
150	(151)	6.3x11	0.250	0.500	290	8x11.5	0.117	0.234	555
180	(181)	8x11.5	0.230	0.460	400				
220	(221)	8x11.5	0.117	0.234	555	8x11.5	0.117	0.234	555
330	(331)	8x11.5	0.117	0.234	555	10x12.5	0.090	0.180	755
470	(471)	10x12.5	0.090	0.180	755	10x16	0.068	0.136	1050
560	(561)					10x20	0.052	0.104	1220
680	(681)	10x16	0.068	0.136	1050	10x20	0.052	0.104	1220
820	(821)	10x20	0.052	0.104	1220	10x25	0.045	0.090	1440
1000	(102)	10x20	0.052	0.104	1220	12.5x20	0.038	0.076	1655
1200	(122)	10x25	0.045	0.090	1440				
1500	(152)	12.5x20	0.038	0.076	1655	16x25	0.022	0.044	1950
1800	(182)					14x31.5	0.025	0.050	2310
2200	(222)	12.5x25	0.030	0.060	1945	16x25	0.026	0.052	2390
2700	(272)	14x25	0.025	0.050	2310	16x25	0.022	0.044	2555
3300	(332)	16x25	0.026	0.052	2390	16x31.5	0.018	0.036	3010
3900	(392)	16x25	0.022	0.044	2555	16x35.5	0.016	0.032	3150
4700	(472)	16x31.5	0.018	0.036	3010	18x35.5	0.015	0.030	3680
5600	(562)	16x35.5	0.016	0.032	3150				
6800	(682)	18x35.5	0.015	0.030	3680	18x40	0.014	0.028	3800
8200	(822)	18x35.5	0.015	0.030	3680				
10000	(103)	18x40	0.014	0.028	3800				

SUMEC



CD288HL 型铝电解电容器

CD288HL Series Aluminum Electrolytic Capacitor

Ur (V)		35 (1V)				50 (1H)			
Cr (μF)		ΦDxL (mm)	Z(Ω)		Ir (mA) 105°C/100KHz	ΦDxL (mm)	Z(Ω)		Ir (mA) 105°C/100KHz
			20°C/100KHz	-10°C/100KHz			20°C/100KHz	-10°C/100KHz	
0.47	(R47)					5x11	5.000	10.00	25
1	(010)					5x11	3.500	7.000	40
2.2	(2R2)					5x11	3.000	6.000	55
3.3	(3R3)					5x11	2.600	5.200	65
4.7	(4R7)	5x11	0.600	1.200	180	5x11	2.300	4.600	90
10	(100)	5x11	0.600	1.200	180	5x11	1.400	2.800	120
18	(180)					5x11	1.300	2.600	120
22	(220)	5x11	0.600	1.200	180	5x11	1.200	2.400	170
27	(220)	5x11	0.650	1.300	175				
33	(330)	5x11	0.600	1.200	180	6.3x11	0.430	0.860	300
47	(470)	6.3x11	0.250	0.500	290	6.3x11	0.430	0.860	300
56	(560)	6.3x11	0.250	0.500	290	8x11.5	0.400	0.800	360
82	(820)	8x11.5	0.200	0.400	400	8x11.5	0.234	0.468	485
100	(101)	8x11.5	0.117	0.234	555	8x11.5	0.234	0.468	485
120	(121)					8x16	0.155	0.310	635
150	(151)	8x11.5	0.117	0.234	555	10x12.5	0.162	0.324	615
180	(181)					8x20	0.120	0.240	860
220	(221)	10x12.5	0.090	0.180	755	10x16	0.119	0.238	850
270	(271)					10x25	0.082	0.164	1200
330	(331)	10x16	0.068	0.136	1050	10x20	0.090	0.180	1010
390	(391)	10x20	0.052	0.104	1220	12.5x20	0.063	0.126	1480
470	(471)	10x20	0.052	0.104	1220	12.5x20	0.060	0.120	1500
560	(561)	10x25	0.045	0.090	1440	12.5x25	0.050	0.100	1832
680	(681)	12.5x20	0.038	0.076	1655	12.5x25	0.050	0.100	1470
820	(821)					14x31.5	0.034	0.068	2285
1000	(102)	12.5x25	0.030	0.060	1945	16x25	0.034	0.068	2235
1200	(122)	14x25	0.025	0.050	2310	16x31.5	0.028	0.056	2700
1500	(152)	16x25	0.026	0.052	2390	16x31.5	0.026	0.052	1970
1800	(182)	16x25	0.022	0.044	2555	18x31.5	0.025	0.050	3000
2200	(222)	16x31.5	0.018	0.036	3010	18x35.5	0.023	0.046	3100
2700	(272)	16x35.5	0.016	0.032	3150				
3300	(332)	18x35.5	0.015	0.030	3680				
4700	(472)	18x40	0.014	0.028	3800				



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CD288HL Series Aluminum Electrolytic Capacitor

U _R (V)		63 (1J)				100 (2A)			
C _R (μF)		ΦDxL (mm)	Z (Ω)		I _L (mA) 105°C/100KHz	ΦDxL (mm)	Z (Ω)		I _L (mA) 105°C/100KHz
			20°C/100KHz	-10°C/100KHz			20°C/100KHz	-10°C/100KHz	
0.47	(R47)					5x11	43.00	86.00	20
1	(010)					5x11	20.00	40.00	30
2.2	(2R2)					5x11	9.800	19.60	44
3.3	(3R3)					5x11	6.600	13.20	58
4.7	(4R7)	5x11	4.700	5.400	68	5x11	4.600	9.200	74
6.8	(6R8)	5x11	2.500	5.000	95	5x11	3.500	7.000	95
10	(100)	5x11	2.100	4.100	110	6.3x11	1.800	3.600	130
12	(120)	5x11	2.000	4.000	145				
15	(150)	6.3x11	1.200	2.400	160	8x11.5	0.830	1.660	180
18	(180)					8x11.5	0.800	1.600	200
22	(220)	6.3x11	0.710	1.420	250	8x11.5	0.680	1.360	330
33	(330)	6.3x11	0.710	1.420	250	10x12.5	0.460	0.920	320
39	(390)	8x11.5	0.700	1.400	330				
47	(470)	8x11.5	0.342	0.684	360	10x16	0.370	0.740	420
68	(680)	8x11.5	0.342	0.684	405	10x20	0.300	0.600	490
82	(820)					10x25	0.250	0.500	540
100	(101)	10x12.5	0.256	0.512	535	12.5x20	0.180	0.360	580
120	(121)	10x16	0.194	0.388	600				
150	(151)	10x16	0.194	0.388	660	12.5x25	0.130	0.260	710
180	(181)	10x20	0.147	0.294	885	14x31.5	0.120	0.240	790
220	(221)	10x20	0.200	0.400	770	16x25	0.100	0.200	890
270	(271)	12.5x20	0.090	0.180	1410				
330	(331)	12.5x20	0.085	0.170	1285	16x25	0.090	0.180	1080
390	(391)	12.5x25	0.070	0.140	1720	18x25	0.083	0.166	1260
470	(471)	12.5x25	0.070	0.140	1470	16x31.5	0.076	0.152	1310
560	(561)					18x31.5	0.068	0.136	1370
680	(681)	16x25	0.050	0.100	2160	18x35.5	0.064	0.128	1410
820	(821)	16x31.5	0.043	0.086	2670				
1000	(102)	16x31.5	0.043	0.086	2340	18x40	0.047	0.094	1520
1200	(122)	18x31.5	0.032	0.064	2950				
1500	(152)	18x35.5	0.030	0.060	3095				
2200	(222)	18x40	0.028	0.056	3200				

U _R (V)		160 (2C)		200 (2D)		250 (2E)		315 (2F)		350 (2V)		400 (2G)		450 (2W)	
C _R (μF)		ΦDxL (mm)	I _L (mA)	ΦDxL (mm)	I _L (mA)	ΦDxL (mm)	I _L (mA)	ΦDxL (mm)	I _L (mA)	ΦDxL (mm)	I _L (mA)	ΦDxL (mm)	I _L (mA)	ΦDxL (mm)	I _L (mA)
1	(010)	6.3x11	17	6.3x11	17	6.3x11	17	8x11.5	16	10x12.5	17	10x12.5	16	10x12.5	18
2.2	(2R2)	6.3x11	25	6.3x11	25	8x11.5	29	10x12.5	28	10x16	31	10x16	27	10x20	29
3.3	(3R3)	8x11.5	36	8x11.5	36	10x12.5	42	10x12.5	34	10x16	38	10x20	36	12.5x20	41
4.7	(4R7)	8x11.5	43	10x12.5	50	10x12.5	50	10x16	45	10x20	49	10x20	43	12.5x20	49
10	(100)	10x12.5	70	10x16	80	10x20	88	10x20	72	12.5x20	82	12.5x20	72	16x25	75
22	(220)	10x20	130	10x20	140	12.5x25	155	12.5x25	120	16x25	130	16x25	110	16x31.5	115
33	(330)	12.5x20	180	12.5x25	190	12.5x25	190	16x25	155	16x31.5	160	16x31.5	140	18x35.5	145
47	(470)	12.5x25	220	12.5x25	220	16x25	230	16x35.5	190	18x35.5	200	18x35.5	170	20x40	175
100	(101)	16x25	330	16x31.5	335	18x35.5	340	18x40	285	20x40	290	22x50	350	26x50	350
220	(221)	18x35.5	500	18x40	515	20x40	525	22x50	540	26x50	550				
330	(331)	20x40	900	22x40	1100	22x50	1150								
470	(471)	22x50	1200	22x50	1300	26x50	1350								

*额定纹波电流 I_LRated ripple current (105°C,100Hz或120Hz)