

## CD81 105°C, Standard Series

- Wide operating temperature range of -40°C ~ +105°C
- Standard series for general purpose
- Load life of 2000 hours at 105°C

### ■ Specifications

Item	Characteristics																														
Operating Temperature Range	-40°C ~ +105°C																														
Rated Voltage Range	6.3V ~ 400V																														
Nominal Capacitance Range	0.1£ ¢ ~ 15000£ ¢																														
Capacitance Tolerance	M (± 20%) (20°C, 120Hz)																														
Leakage Current	6.3V ~ 100V																														
	160V ~ 400V																														
	$I \leq 0.01C_R U_R$ or 3 (£ ¢), whichever is greater. $I \leq 0.03C_R U_R + 10$ (£ ¢) $C_R$ : Nominal capacitance (£ ¢) $U_R$ : Rated voltage(V) (20°C, after 5 minutes)																														
Dissipation Factor (Max)	<table border="1"> <tr> <th><math>U_R</math>(V)</th> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> <td>160 ~ 250</td> <td>315 ~ 400</td> </tr> <tr> <th><math>\tan \delta</math></th> <td>0.24</td> <td>0.20</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>0.12</td> <td>0.15</td> </tr> </table>	$U_R$ (V)	6.3	10	16	25	35	50	63	100	160 ~ 250	315 ~ 400	$\tan \delta$	0.24	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.12	0.15								
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	$\tan \delta$	0.24	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.12	0.15																				
0.02 is added to every 1000£ ¢ increase over 1000£ ¢. (20°C, 120Hz)																															
Low Temperature Stability (Impedance Ratio)	<table border="1"> <tr> <th><math>U_R</math>(V)</th> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35 ~ 100</td> <td>160 ~ 200</td> <td>250 ~ 350</td> <td>400</td> </tr> <tr> <th><math>Z(-25^\circ\text{C})/Z(+20^\circ\text{C})</math></th> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>3</td> <td>4</td> <td>6</td> </tr> <tr> <th><math>Z(-40^\circ\text{C})/Z(+20^\circ\text{C})</math></th> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>4</td> <td>8</td> <td>10</td> </tr> </table>	$U_R$ (V)	6.3	10	16	25	35 ~ 100	160 ~ 200	250 ~ 350	400	$Z(-25^\circ\text{C})/Z(+20^\circ\text{C})$	5	4	3	2	2	3	4	6	$Z(-40^\circ\text{C})/Z(+20^\circ\text{C})$	10	8	6	4	3	4	8	10			
	$U_R$ (V)	6.3	10	16	25	35 ~ 100	160 ~ 200	250 ~ 350	400																						
	$Z(-25^\circ\text{C})/Z(+20^\circ\text{C})$	5	4	3	2	2	3	4	6																						
$Z(-40^\circ\text{C})/Z(+20^\circ\text{C})$	10	8	6	4	3	4	8	10																							
(120Hz)																															
Load Life	After 2000 hours' application of rated voltage with rated ripple current at 105°C, the capacitor shall meet the following requirement:																														
	<table border="1"> <tr> <td>Capacitance change</td> <td>Within ± 20% of the initial value.</td> </tr> <tr> <td>Dissipation factor</td> <td>Not more than 200% of the initial specified value.</td> </tr> <tr> <td>Leakage current</td> <td>Not more than the initial specified value.</td> </tr> </table>	Capacitance change	Within ± 20% of the initial value.	Dissipation factor	Not more than 200% of the initial specified value.	Leakage current	Not more than the initial specified value.																								
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Shelf Life	After storage for 1000 hours at +105°C, the capacitors shall meet the requirement of load life above.																														
Rated Ripple Current & Frequency Multipliers	<table border="1"> <tr> <th>Cap. \ Freq.</th> <th>50 Hz</th> <th>120Hz</th> <th>300Hz</th> <th>1kHz</th> <th>10kHz</th> </tr> <tr> <td>0.1 µ F ~ 6.8 µ F</td> <td>0.65</td> <td>1.00</td> <td>1.35</td> <td>1.75</td> <td>2.30</td> </tr> <tr> <td>10 µ F ~ 68 µ F</td> <td>0.75</td> <td>1.00</td> <td>1.25</td> <td>1.50</td> <td>1.75</td> </tr> <tr> <td>100 µ F ~ 1000 µ F</td> <td>0.80</td> <td>1.00</td> <td>1.15</td> <td>1.30</td> <td>1.40</td> </tr> <tr> <td>1500 µ F ~</td> <td>0.85</td> <td>1.00</td> <td>1.03</td> <td>1.05</td> <td>1.08</td> </tr> </table>	Cap. \ Freq.	50 Hz	120Hz	300Hz	1kHz	10kHz	0.1 µ F ~ 6.8 µ F	0.65	1.00	1.35	1.75	2.30	10 µ F ~ 68 µ F	0.75	1.00	1.25	1.50	1.75	100 µ F ~ 1000 µ F	0.80	1.00	1.15	1.30	1.40	1500 µ F ~	0.85	1.00	1.03	1.05	1.08
	Cap. \ Freq.	50 Hz	120Hz	300Hz	1kHz	10kHz																									
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Rated Ripple Current & Temperature Multipliers	<table border="1"> <tr> <th>Temperature</th> <td>+50°C</td> <td>+70°C</td> <td>+85°C</td> <td>+105°C</td> </tr> <tr> <th>Multiplier</th> <td>2.10</td> <td>1.78</td> <td>1.40</td> <td>1.00</td> </tr> </table>	Temperature	+50°C	+70°C	+85°C	+105°C	Multiplier	2.10	1.78	1.40	1.00																				
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### ■ Dimensions



(mm)

D	±0.5			±1.0									
	5	6.3	8	10		12.5		16		18			
L	11	11	11.5	12.5	16	20	20	25	25	31.5	35.5	35.5	40
F±0.5	2	2.5	3.5	5				7.5					
d±0.1	0.5			0.6				0.8					
α	1.5				2.0								

## CD81 Series

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

U <sub>R</sub> (V) C <sub>R</sub> (μF) Item	6.3		10		16		25		35		50		63	
	D×L mm	I~	D×L mm	I~	D×L mm	I~	D×L mm	I~	D×L mm	I~	D×L mm	I~	D×L mm	I~
0.10											5×11	3		
0.15											5×11	4		
0.22											5×11	5		
0.33											5×11	6		
0.47											5×11	8	5×11	10
0.68											5×11	11	5×11	13
1.0											5×11	14	5×11	15
1.5											5×11	17	5×11	19
2.2									5×11	19	5×11	21	5×11	23
3.3									5×11	23	5×11	26	5×11	28
4.7							5×11	26	5×11	28	5×11	31	5×11	34
6.8							5×11	30	5×11	34	5×11	39	5×11	41
10					5×11	35	5×11	37	5×11	42	5×11	48	5×11	50
15					5×11	45	5×11	48	5×11	51	5×11	57	6.3×11	65
22			5×11	45	5×11	55	5×11	59	5×11	62	5×11	70	6.3×11	79
33	5×11	55	5×11	58	5×11	66	5×11	70	5×11	76	6.3×11	101	6.3×11	103
47	5×11	66	5×11	68	5×11	80	5×11	85	6.3×11	104	6.3×11	118	8×11.5	135
68	5×11	80	5×11	87	6.3×11	106	6.3×11	117	8×11.5	139	8×11.5	159	10×12.5	179
100	5×11	97	5×11	106	6.3×11	129	6.3×11	143	8×11.5	169	8×11.5	193	10×12.5	217
150	6.3×11	134	6.3×11	146	8×11.5	176	8×11.5	202	10×12.5	229	10×16	280	10×20	308
220	6.3×11	162	6.3×11	177	8×11.5	214	8×11.5	245	10×12.5	278	10×16	339	10×20	374
330	6.3×11	198	8×11.5	236	8×11.5	266	10×12.5	319	10×16	395	10×20	458	12.5×20	570
470	8×11.5	259	8×11.5	281	8×11.5	314	10×16	429	10×20	514	12.5×20	535	12.5×25	715
680	10×12.5	375	10×12.5	379	10×16	461	12.5×20	627	12.5×25	746	16×25	895	16×25	767
1000	10×12.5	454	10×16	520	10×20	626	10×20	680	12.5×25	905	16×25	1085	16×31.5	1043
1500	10×20	586	10×20	627	12.5×20	759	16×25	1018	16×25	1032	16×35.5	1213		
2200	12.5×20	793	12.5×20	849	12.5×25	1028	16×25	1233	16×31.5	1403	18×35.5	1559		
3300	12.5×20	939	12.5×25	1118	16×25	1323	16×31.5	1571	18×35.5	1707				
4700	16×25	1378	16×25	1425	16×31.5	1661	18×35.5	1925						
6800	16×25	1527	16×25	1572	18×35.5	1887								
10000	16×31.5	1852	18×35.5	2004										
15000	18×35.5	2131												

↑ Rated ripple current (mA rms) (105°C, 120Hz)

## CD81 Series

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

U <sub>R</sub> (V) C <sub>R</sub> (μF) Item	100		160		200		250		315		350		400	
	D×L mm	I~	D×L mm	I~	D×L mm	I~	D×L mm	I~	D×L mm	I~	D×L mm	I~	D×L mm	I~
0.1	5×11	5												
0.15	5×11	6												
0.22	5×11	7												
0.33	5×11	9												
0.47	5×11	11	6.3×11	12	6.3×11	12	6.3×11	12	6.3×11	12	6.3×11	12		
0.68	5×11	14	6.3×11	15	6.3×11	15	6.3×11	15	6.3×11	15	6.3×11	15		
1.0	5×11	17	6.3×11	18	6.3×11	18	6.3×11	18	6.3×11	18	6.3×11	18	8×11.5	18
1.5	5×11	21	6.3×11	22	6.3×11	22	6.3×11	22	8×11.5	24	8×11.5	24	10×12.5	26
2.2	5×11	25	6.3×11	26	6.3×11	26	8×11.5	29	8×11.5	29	8×11.5	29	10×12.5	32
3.3	5×11	31	8×11.5	33	8×11.5	33	10×12.5	36	10×12.5	36	10×12.5	36	10×16	42
4.7	5×11	37	8×11.5	38	10×12.5	43	10×12.5	43	10×16	50	10×16	50	10×20	55
6.8	6.3×11	45	10×12.5	47	10×16	60	10×16	60	10×20	67	12.5×20	73	12.5×20	73
10	6.3×11	55	10×12.5	56	10×16	73	10×20	82	12.5×20	89	12.5×20	89	12.5×20	89
15	8×11.5	85	10×16	81	10×20	100	12.5×20	107	12.5×25	109	12.5×25	109	16×25	123
22	8×11.5	104	10×20	111	10×20	122	12.5×25	132	12.5×25	132	16×25	149	16×25	149
33	10×12.5	145	12.5×20	162	12.5×25	178	12.5×25	178	16×25	196	16×25	196	16×31.5	217
47	10×16	186	12.5×25	218	12.5×25	218	16×25	237	16×31.5	258	16×35.5	272	18×35.5	286
68	10×20	218	16×25	265	16×31.5	310	16×35.5	318	18×35.5	325	18×40	346		
100	12.5×20	296	16×25	322	16×31.5	376	18×35.5	410	18×40	419				
150	12.5×25	355	16×35.5	470	18×35.5	474								
220	16×25	497	18×35.5	604	18×40	610								
330	16×25	609												
470	16×31.5	802												

↑  
Rated ripple current (mA rms) (105°C, 120Hz)