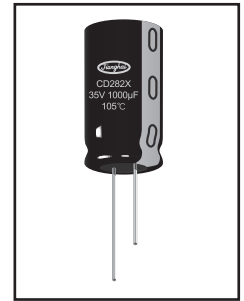
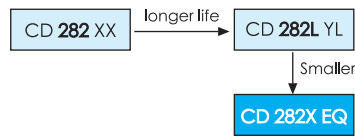


# CD 282X EQ SERIES



4000 - 10000h at 105°C

- Miniaturized
- Ultra Low Impedance
- High ripple current
- Switching power supplies

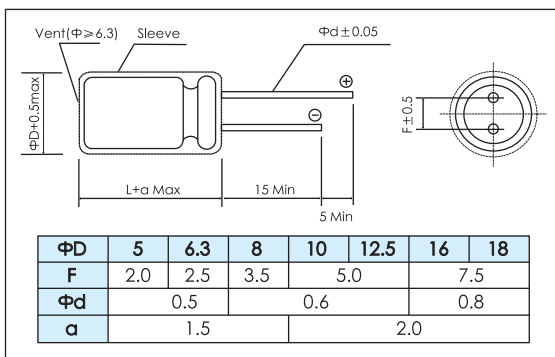


Items	Characteristics																											
Operating Temperature Range (°C)	-40 ~ +105																											
Voltage Range (V)	6.3 ~ 100																											
Capacitance Range (µF)	1 ~ 15000																											
Capacitance Tolerance (20°C, 120Hz)	± 20%																											
Leakage Current (µA)	After 2 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 3µA, whichever is greater. C: Nominal Capacitance (µF) V: Rated Voltage (V)																											
Dissipation Factor (20°C, 120Hz)	<table border="1"> <thead> <tr> <th>Rated Voltage (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> </tr> </thead> <tbody> <tr> <td>Tan δ (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> </tr> </tbody> </table>	Rated Voltage (V)	6.3	10	16	25	35	50	63	100	Tan δ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08									
	Rated Voltage (V)	6.3	10	16	25	35	50	63	100																			
Tan δ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08																				
For Capacitances >1000µF add 0.02 to every 1000µF																												
Stability at Low Temperature (Impedance Ratio at 120Hz)	<table border="1"> <thead> <tr> <th>Rated Voltage (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> </tr> </thead> <tbody> <tr> <td>Z<sub>-25°C</sub> / Z<sub>+20°C</sub></td> <td>4</td> <td>3</td> <td colspan="6">2</td> </tr> <tr> <td>Z<sub>-40°C</sub> / Z<sub>+20°C</sub></td> <td>8</td> <td>6</td> <td>4</td> <td colspan="5">3</td> </tr> </tbody> </table>	Rated Voltage (V)	6.3	10	16	25	35	50	63	100	Z <sub>-25°C</sub> / Z <sub>+20°C</sub>	4	3	2						Z <sub>-40°C</sub> / Z <sub>+20°C</sub>	8	6	4	3				
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Lifetime	Useful Life				Load Life		Endurance Test		Shelf Life
	Φ 5 Φ 6.3-8 Φ 10-18	6.3~10V 6000h 8000h 10000h	16~100V 7000h 9000h 12000h	≥250000h	6.3~10V 4000h 6000h 8000h	16~100V 5000h 7000h 10000h	6.3~10V 6000h 8000h 10000h	16~100V 7000h 9000h 12000h	
Leakage Current	Not more than specified value				Not more than specified value		Not more than specified value		Not more than specified value
Capacitance Change	Within ± 40% of initial value				Within ± 25% of initial value		Within ± 25% of initial value		Within ± 20% of initial value
Dissipation Factor	Not more than 300% of specified value				Not more than 200% of specified value		Not more than 200% of specified value		Not more than 200% of specified value
Condition: Applied Voltage Applied Current Applied Temperature	U <sub>R</sub> I <sub>R</sub> 105°C	U <sub>R</sub> 1.4 x I <sub>R</sub> 40°C	U <sub>R</sub> I <sub>R</sub> 105°C		U <sub>R</sub> I <sub>R</sub> = 0 105°C		U <sub>R</sub> I <sub>R</sub> = 0 105°C	After test: U <sub>R</sub> to be applied for 30min >24h before measurement	

## Dimensions

mm



## Frequency Coefficient

Cap (µF)	Frequency			
	120Hz	1kHz	10kHz	100kHz
1	0.35	0.60	0.80	1.00
2.2~10	0.42	0.60	0.80	1.00
22~47	0.55	0.75	0.90	1.00
100~330	0.70	0.85	0.95	1.00
470~1000	0.75	0.90	0.98	1.00
2200~15000	0.80	0.95	1.00	1.00

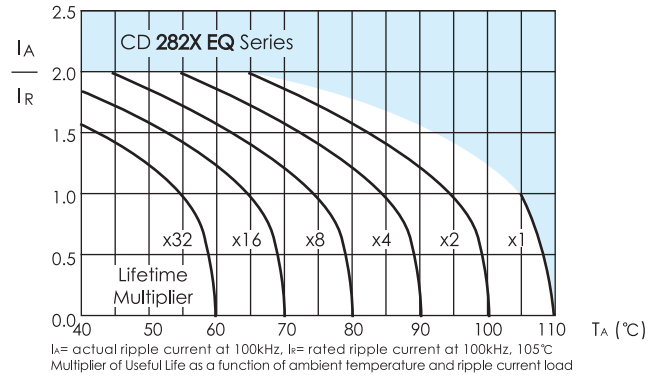
## Temperature Coefficient

Temperature(°C)	+65	+85	+105
Coefficient	2.0	1.7	1.0

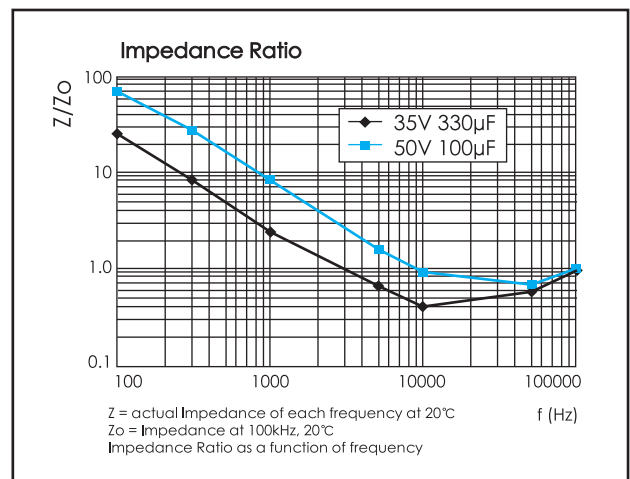
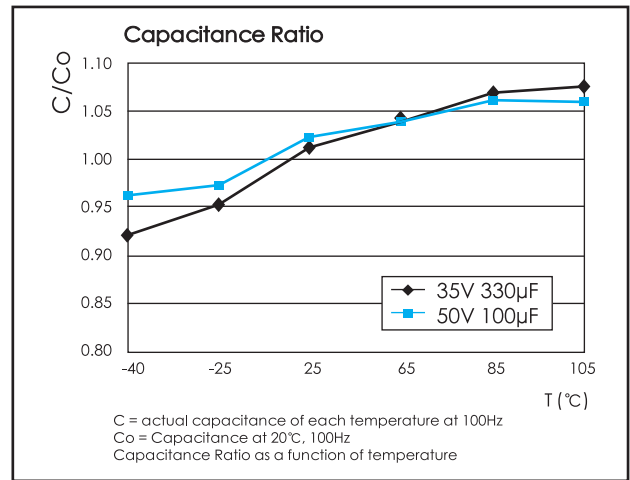
## Ratings for CD 282X EQ Series

U <sub>r</sub> (Surge Voltage) Code	Rated Capacitance	Max Imp 20°C, 100kHz	Max Imp -10°C, 100kHz	Rated Ripple Current 105°C, 100kHz	Size ΦD x L	P/N
(V)	(μF)	(Ω)	(Ω)	(mA rms)	(mm)	-
6.3 (7.2) 0J	100	0.90	3.6	150	5 × 11.5	ECR0JEQ101M□□050011
	220	0.40	1.2	250	5 × 11.5	ECR0JEQ221M□□050011
	330	0.22	0.87	340	6.3 × 11.5	ECR0JEQ331M□□063011
	470	0.22	0.87	400	6.3 × 11.5	ECR0JEQ471M□□063011
	1000	0.13	0.52	640	8 × 11.5	ECR0JEQ102M□□080011
	2200	0.062	0.25	1300	10 × 16	ECR0JEQ222M□□100016
	3300	0.046	0.18	1400	10 × 20	ECR0JEQ332M□□100020
	4700	0.032	0.11	2230	12.5 × 25	ECR0JEQ472M□□125025
	6800	0.032	0.11	2230	12.5 × 25	ECR0JEQ682M□□125025
	10000	0.021	0.060	2930	16 × 25	ECR0JEQ103M□□160025
10 (13) 1A	15000	0.015	0.044	3610	16 × 35.5	ECR0JEQ153M□□160035
	100	0.90	3.6	150	5 × 11.5	ECR1AEQ101M□□050011
	220	0.40	1.2	250	5 × 11.5	ECR1AEQ221M□□050011
	330	0.22	0.87	400	6.3 × 11.5	ECR1AEQ331M□□063011
	470	0.22	0.87	400	6.3 × 11.5	ECR1AEQ471M□□063011
	1000	0.080	0.32	865	10 × 12.5	ECR1AEQ102M□□100012
	2200	0.046	0.18	1400	10 × 20	ECR1AEQ222M□□100020
	3300	0.041	0.14	1900	12.5 × 20	ECR1AEQ332M□□125020
	4700	0.032	0.11	2230	12.5 × 25	ECR1AEQ472M□□125025
	6800	0.021	0.060	2930	16 × 25	ECR1AEQ682M□□160025
16 (20) 1C	10000	0.019	0.056	3450	16 × 31.5	ECR1AEQ103M□□160031
	47	0.40	1.2	250	5 × 11.5	ECR1CEQ470M□□050011
	100	0.40	1.2	250	5 × 11.5	ECR1CEQ101M□□050011
	220	0.22	0.87	400	6.3 × 11.5	ECR1CEQ221M□□063011
	330	0.22	0.87	400	6.3 × 11.5	ECR1CEQ331M□□063011
	470	0.13	0.52	640	8 × 11.5	ECR1CEQ471M□□080011
	1000	0.062	0.25	1210	10 × 16	ECR1CEQ102M□□100016
	2200	0.041	0.14	1900	12.5 × 20	ECR1CEQ222M□□125020
	3300	0.032	0.11	2230	12.5 × 25	ECR1CEQ332M□□125025
	4700	0.021	0.060	2930	16 × 25	ECR1CEQ472M□□160025
25 (32) 1E	6800	0.019	0.056	3450	16 × 31.5	ECR1CEQ682M□□160031
	33	0.40	1.2	250	5 × 11.5	ECR1EEQ330M□□050011
	47	0.40	1.2	250	5 × 11.5	ECR1EEQ470M□□050011
	100	0.40	1.2	250	5 × 11.5	ECR1EEQ101M□□050011
	220	0.22	0.87	400	6.3 × 11.5	ECR1EEQ221M□□063011
	330	0.13	0.52	640	8 × 11.5	ECR1EEQ331M□□080011
	470	0.080	0.32	865	10 × 12.5	ECR1EEQ471M□□100012
	1000	0.046	0.18	1400	10 × 20	ECR1EEQ102M□□100020
	2200	0.032	0.11	2230	12.5 × 25	ECR1EEQ222M□□125025
	3300	0.021	0.060	2930	16 × 25	ECR1EEQ332M□□160025
35 (44) 1V	4700	0.019	0.056	3450	16 × 31.5	ECR1EEQ472M□□160031
	33	0.40	1.2	250	5 × 11.5	ECR1VEQ330M□□050011
	47	0.40	1.2	250	5 × 11.5	ECR1VEQ470M□□050011
	100	0.22	0.87	400	6.3 × 11.5	ECR1VEQ101M□□063011
	220	0.13	0.52	640	8 × 11.5	ECR1VEQ221M□□080011
	330	0.080	0.32	865	10 × 12.5	ECR1VEQ331M□□100012
	470	0.062	0.25	1210	10 × 16	ECR1VEQ471M□□100016
	1000	0.041	0.14	1900	12.5 × 20	ECR1VEQ102M□□125020
	2200	0.021	0.060	2930	16 × 25	ECR1VEQ222M□□160025
	3300	0.019	0.056	3450	16 × 31.5	ECR1VEQ332M□□160031
50 (63) 1H	1	4.0	8.0	30	5 × 11.5	ECR1HEQ010M□□050011
	2.2	2.5	6.0	43	5 × 11.5	ECR1HEQ2R2M□□050011
	3.3	2.2	5.6	53	5 × 11.5	ECR1HEQ3R3M□□050011
	4.7	1.9	5.0	88	5 × 11.5	ECR1HEQ4R7M□□050011
	10	1.5	4.0	100	5 × 11.5	ECR1HEQ100M□□050011
	22	0.70	2.8	180	5 × 11.5	ECR1HEQ220M□□050011
	33	0.70	2.8	250	5 × 11.5	ECR1HEQ330M□□050011
	47	0.30	1.2	295	6.3 × 11.5	ECR1HEQ470M□□063011
	100	0.17	0.68	555	8 × 11.5	ECR1HEQ101M□□080011
	220	0.084	0.34	1050	10 × 16	ECR1HEQ221M□□100016
63 (79) 1J	330	0.060	0.24	1220	10 × 20	ECR1HEQ331M□□100020
	470	0.045	0.15	1660	12.5 × 20	ECR1HEQ471M□□125020
	1000	0.032	0.096	2730	16 × 25	ECR1HEQ102M□□160025
	2200	0.019	0.057	3150	16 × 35.5	ECR1HEQ222M□□160035
	10	0.88	3.5	173	5 × 11.5	ECR1JEQ100M□□050011
	22	0.88	3.5	173	5 × 11.5	ECR1JEQ220M□□050011
	33	0.35	1.4	278	6.3 × 11.5	ECR1JEQ330M□□063011
	47	0.35	1.4	278	6.3 × 11.5	ECR1JEQ470M□□063011
	100	0.15	0.60	725	10 × 12.5	ECR1JEQ101M□□100012
	220	0.078	0.31	1200	10 × 20	ECR1JEQ221M□□100020
100 (125) 2A	330	0.060	0.19	1570	12.5 × 20	ECR1JEQ331M□□125020
	470	0.043	0.14	1990	12.5 × 25	ECR1JEQ471M□□125025
	1000	0.032	0.096	2730	16 × 25	ECR1JEQ102M□□160025
	1	4.5	15.0	20	5 × 11.5	ECR2AEQ010M□□050011
	2.2	3.0	13.0	30	5 × 11.5	ECR2AEQ2R2M□□050011
	3.3	2.7	11.0	40	5 × 11.5	ECR2AEQ3R3M□□050011
	4.7	2.5	10.0	65	5 × 11.5	ECR2AEQ4R7M□□050011
	10	0.57	2.3	267	6.3 × 11.5	ECR2AEQ100M□□063011
	22	0.57	2.3	267	6.3 × 11.5	ECR2AEQ220M□□063011
	33	0.36	1.4	462	8 × 11.5	ECR2AEQ330M□□080011
100 (125) 2A	47	0.25	1.0	585	8 × 16	ECR2AEQ470M□□080016
	100	0.12	0.52	1040	10 × 20	ECR2AEQ101M□□100020
	220	0.060	0.23	1620	12.5 × 25	ECR2AEQ221M□□125025
	330	0.044	0.16	2210	16 × 25	ECR2AEQ331M□□160025

## Lifetime Diagram



## Typical Curves



Customer products are available on request.