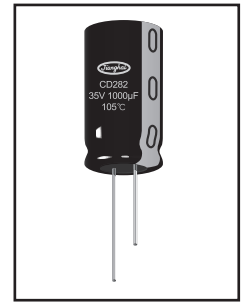
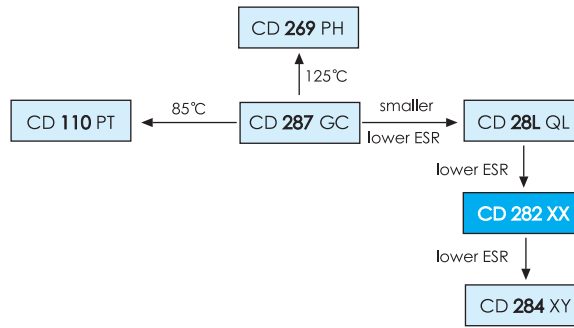


# CD 282 XX SERIES



3000 - 6000h at 105°C

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

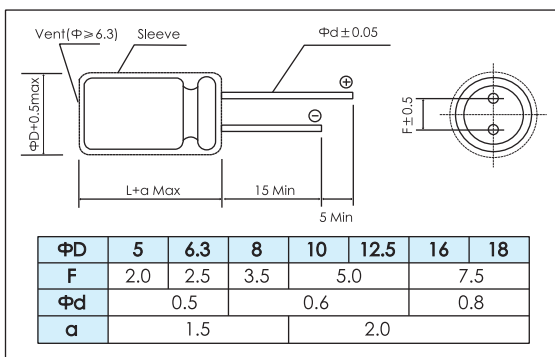


Items	Characteristics																											
Operating Temperature Range (°C)	-40 ~ +105																											
Voltage Range (V)	6.3 ~ 100																											
Capacitance Range (µF)	6.8 ~ 18000																											
Capacitance Tolerance (20°C, 120Hz)	± 20%																											
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>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>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>3</td> <td>3</td> <td>3</td> <td>3</td> <td>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	2	2	2	2	2	Z <sub>-40°C</sub> / Z <sub>+20°C</sub>	8	6	4	3	3	3	3	3
	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	2	2	2	2	2																			
Z <sub>-40°C</sub> / Z <sub>+20°C</sub>	8	6	4	3	3	3	3	3																				

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	Φ 5 - 6.3 : 4000h Φ 8 : 6000h Φ 10 : 7000h Φ 12.5 - 18: 8000h	Φ ≥ 8: > 250000h	Φ 5 - 6.3 : 3000h Φ 8 : 4000h Φ 10 : 5000h Φ 12.5 - 18: 6000h	Φ 5 - 6.3 : 3500h Φ 8 : 5000h Φ 10 : 6000h Φ 12.5 - 18: 7000h	1000h
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> = 0 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
6.8 ~ 33	0.42	0.70	0.90	1.00
39 ~ 270	0.50	0.73	0.92	1.00
330 ~ 680	0.55	0.77	0.94	1.00
820 ~ 1800	0.60	0.80	0.96	1.00
2200 ~ 18000	0.70	0.85	0.98	1.00

## Temperature Coefficient

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

## Ratings for CD 282 XX 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 <sub>rms</sub> )	(mm)	-
6.3 (7.2) 0J	150	0.58	2.3	210	5×11.5	ECROJXX151M□□050011
	330	0.22	0.87	340	6.3×11.5	ECROJXX331M□□063011
	680	0.13	0.52	640	8×11.5	ECROJXX681M□□080011
	820	0.080	0.32	865	10×12.5	ECROJXX821M□□100012
	1000	0.087	0.35	840	8×16	ECROJXX102M□□080016
	1200	0.069	0.27	1050	8×20	ECROJXX122M□□080020
		0.060	0.24	1210	10×16	ECROJXX122M□□100016
	1500	0.046	0.18	1400	10×20	ECROJXX152M□□100020
	1800	0.049	0.16	1450	12.5×16	ECROJXX182M□□125016
	2200	0.042	0.17	1650	10×25	ECROJXX222M□□100025
	2700	0.031	0.12	1910	10×30	ECROJXX272M□□100030
		0.042	0.12	1940	16×16	ECROJXX272M□□160016
	3300	0.035	0.12	1900	12.5×20	ECROJXX332M□□125020
	3900	0.027	0.089	2230	12.5×25	ECROJXX392M□□125025
		0.043	0.11	2210	18×16	ECROJXX392M□□180016
	4700	0.024	0.078	2650	12.5×30	ECROJXX472M□□125030
	5600	0.020	0.065	2880	12.5×35	ECROJXX562M□□125035
		0.027	0.078	2530	16×20	ECROJXX562M□□160020
	6800	0.017	0.056	3350	12.5×40	ECROJXX682M□□125040
		0.021	0.060	2930	16×25	ECROJXX682M□□160025
		0.026	0.067	2860	18×20	ECROJXX682M□□180020
	8200	0.017	0.050	3450	16×31.5	ECROJXX822M□□160031
	10000	0.015	0.044	3610	16×35.5	ECROJXX103M□□160035
		0.019	0.049	3140	18×25	ECROJXX103M□□180025
12000	0.013	0.038	4080	16×40	ECROJXX123M□□160040	
	0.015	0.040	4170	18×31.5	ECROJXX123M□□180031	
15000	0.014	0.038	4220	18×35.5	ECROJXX153M□□180035	
18000	0.012	0.032	4280	18×40	ECROJXX183M□□180040	
10 (13) 1A	100	0.58	2.3	210	5×11.5	ECR1AXX101M□□050011
	220	0.22	0.87	340	6.3×11.5	ECR1AXX221M□□063011
	470	0.13	0.52	640	8×11.5	ECR1AXX471M□□080011
	680	0.087	0.35	840	8×16	ECR1AXX681M□□080016
		0.080	0.32	865	10×12.5	ECR1AXX681M□□100012
	1000	0.069	0.27	1050	8×20	ECR1AXX102M□□080020
		0.060	0.24	1210	10×16	ECR1AXX102M□□100016
	1200	0.046	0.18	1400	10×20	ECR1AXX122M□□100020
	1500	0.042	0.17	1650	10×25	ECR1AXX152M□□100025
		0.049	0.16	1450	12.5×16	ECR1AXX152M□□125016
	2200	0.031	0.12	1910	10×30	ECR1AXX222M□□100030
		0.035	0.12	1900	12.5×20	ECR1AXX222M□□125020
	2700	0.042	0.12	1940	16×16	ECR1AXX222M□□160016
		0.043	0.11	2210	18×16	ECR1AXX272M□□180016
	3300	0.027	0.089	2230	12.5×25	ECR1AXX332M□□125025
	3900	0.024	0.078	2650	12.5×30	ECR1AXX392M□□125030
		0.027	0.078	2530	16×20	ECR1AXX392M□□160020
	4700	0.020	0.065	2880	12.5×35	ECR1AXX472M□□125035
	5600	0.017	0.056	3350	12.5×40	ECR1AXX562M□□125040
		0.021	0.060	2930	16×25	ECR1AXX562M□□160025
		0.026	0.067	2860	18×20	ECR1AXX562M□□180020
	6800	0.017	0.050	3450	16×31.5	ECR1AXX682M□□160031
		0.019	0.049	3140	18×25	ECR1AXX682M□□180025
		0.015	0.044	3610	16×35.5	ECR1AXX822M□□160035
8200	0.015	0.040	4170	18×31.5	ECR1AXX822M□□180031	
	0.013	0.038	4080	16×40	ECR1AXX103M□□160040	
10000	0.014	0.038	4220	18×35.5	ECR1AXX103M□□180035	
	0.012	0.032	4280	18×40	ECR1AXX123M□□180040	

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 <sub>rms</sub> )	(mm)	-
16 (20) 1C	56	0.58	2.3	210	5×11.5	ECR1CXX560M□□050011
	120	0.22	0.87	340	6.3×11.5	ECR1CXX121M□□063011
	330	0.13	0.52	640	8×11.5	ECR1CXX331M□□080011
	470	0.087	0.35	840	8×16	ECR1CXX471M□□080016
		0.080	0.32	865	10×12.5	ECR1CXX471M□□100012
	680	0.069	0.27	1050	8×20	ECR1CXX681M□□080020
		0.060	0.24	1210	10×16	ECR1CXX681M□□100016
	1000	0.046	0.18	1400	10×20	ECR1CXX102M□□100020
		0.049	0.16	1450	12.5×16	ECR1CXX102M□□125016
	1200	0.042	0.17	1650	10×25	ECR1CXX122M□□100025
	1500	0.031	0.12	1910	10×30	ECR1CXX152M□□100030
		0.035	0.12	1900	12.5×20	ECR1CXX152M□□125020
		0.042	0.12	1940	16×16	ECR1CXX152M□□160016
	2200	0.027	0.089	2230	12.5×25	ECR1CXX222M□□125025
		0.043	0.11	2210	18×16	ECR1CXX222M□□180016
	2700	0.024	0.078	2650	12.5×30	ECR1CXX272M□□125030
		0.027	0.078	2530	16×20	ECR1CXX272M□□160020
	3300	0.020	0.065	2880	12.5×35	ECR1CXX332M□□125035
	3900	0.017	0.056	3350	12.5×40	ECR1CXX392M□□125040
		0.021	0.060	2930	16×25	ECR1CXX392M□□160025
		0.026	0.067	2860	18×20	ECR1CXX392M□□180020
	4700	0.017	0.050	3450	16×31.5	ECR1CXX472M□□160031
		0.019	0.049	3140	18×25	ECR1CXX472M□□180025
	5600	0.015	0.044	3610	16×35.5	ECR1CXX562M□□160035
0.015		0.040	4170	18×31.5	ECR1CXX562M□□180031	
6800	0.013	0.038	4080	16×40	ECR1CXX682M□□160040	
8200	0.014	0.038	4220	18×35.5	ECR1CXX822M□□180035	
10000	0.012	0.032	4280	18×40	ECR1CXX103M□□180040	
25 (32) 1E	47	0.58	2.3	210	5×11.5	ECR1EXX470M□□050011
	100	0.22	0.87	340	6.3×11.5	ECR1EXX101M□□063011
	220	0.13	0.52	640	8×11.5	ECR1EXX221M□□080011
	330	0.087	0.35	840	8×16	ECR1EXX331M□□080016
		0.080	0.32	865	10×12.5	ECR1EXX331M□□100012
	470	0.069	0.27	1050	8×20	ECR1EXX471M□□080020
		0.060	0.24	1210	10×16	ECR1EXX471M□□100016
	680	0.046	0.18	1400	10×20	ECR1EXX681M□□100020
		0.049	0.16	1450	12.5×16	ECR1EXX681M□□125016
	820	0.042	0.17	1650	10×25	ECR1EXX821M□□100025
	1000	0.031	0.12	1910	10×30	ECR1EXX102M□□100030
		0.035	0.12	1900	12.5×20	ECR1EXX102M□□125020
	1200	0.042	0.12	1940	16×16	ECR1EXX102M□□160016
		0.043	0.11	2210	18×16	ECR1EXX122M□□180016
	1500	0.027	0.089	2230	12.5×25	ECR1EXX152M□□125025
	1800	0.024	0.078	2650	12.5×30	ECR1EXX182M□□125030
		0.027	0.078	2530	16×20	ECR1EXX182M□□160020
	2200	0.020	0.065	2880	12.5×35	ECR1EXX222M□□125035
		0.026	0.067	2860	18×20	ECR1EXX222M□□180020
	2700	0.017	0.056	3350	12.5×40	ECR1EXX272M□□125040
		0.021	0.060	2930	16×25	ECR1EXX272M□□160025
	3300	0.017	0.050	3450	16×31.5	ECR1EXX332M□□160031
		0.019	0.049	3140	18×25	ECR1EXX332M□□180025
	3900	0.015	0.044	3610	16×35.5	ECR1EXX392M□□160035
0.015		0.040	4170	18×31.5	ECR1EXX392M□□180031	
4700	0.013	0.038	4080	16×40	ECR1EXX472M□□160040	
	0.014	0.038	4220	18×35.5	ECR1EXX472M□□180035	
5600	0.012	0.032	4280	18×40	ECR1EXX562M□□180040	

# CD 282 XX SERIES



## Ratings for CD 282 XX Series

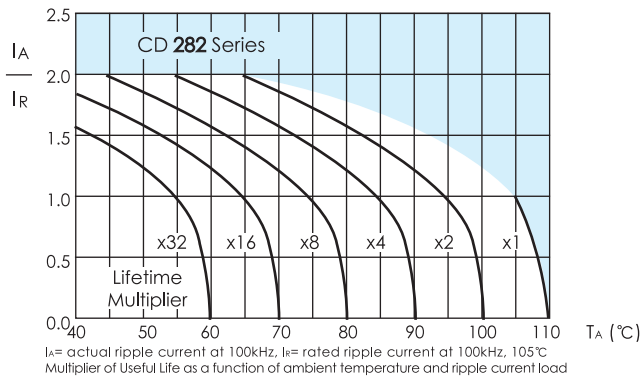
U <sub>r</sub> (Surge Voltage) Code	Rated Capa- cance	Max Imp 20°C, 100kHz	Max Imp -10°C, 100kHz	Rated Ripple Current 105°C, 100kHz	Size ΦD x L	P/N
(V)	(μF)	(Ω)	(Ω)	(mA <sub>rms</sub> )	(mm)	-
35 (44) 1V	33	0.58	2.3	210	5×11.5	ECR1VXX330M□□050011
	56	0.22	0.87	340	6.3×11.5	ECR1VXX560M□□063011
	150	0.13	0.52	640	8×11.5	ECR1VXX151M□□080011
	220	0.087	0.35	840	8×16	ECR1VXX221M□□080016
		0.080	0.32	865	10×12.5	ECR1VXX221M□□100012
	270	0.069	0.27	1050	8×20	ECR1VXX271M□□080020
	330	0.060	0.24	1210	10×16	ECR1VXX331M□□100016
	470	0.046	0.18	1400	10×20	ECR1VXX471M□□100020
		0.049	0.16	1450	12.5×16	ECR1VXX471M□□125016
	560	0.042	0.17	1650	10×25	ECR1VXX561M□□100025
	680	0.031	0.12	1910	10×30	ECR1VXX681M□□100030
		0.035	0.12	1900	12.5×20	ECR1VXX681M□□125020
		0.042	0.12	1940	16×16	ECR1VXX681M□□160016
	1000	0.027	0.089	2230	12.5×25	ECR1VXX102M□□125025
		0.043	0.11	2210	18×16	ECR1VXX102M□□180016
	1200	0.024	0.078	2650	12.5×30	ECR1VXX122M□□125030
		0.027	0.078	2530	16×20	ECR1VXX122M□□160020
	1500	0.020	0.065	2880	12.5×35	ECR1VXX152M□□125035
	1800	0.017	0.056	3350	12.5×40	ECR1VXX182M□□125040
		0.021	0.060	2930	16×25	ECR1VXX182M□□160025
		0.026	0.067	2860	18×20	ECR1VXX182M□□180020
	2200	0.017	0.050	3450	16×31.5	ECR1VXX222M□□160031
		0.019	0.049	3140	18×25	ECR1VXX222M□□180025
	2700	0.015	0.044	3610	16×35.5	ECR1VXX272M□□160035
		0.015	0.040	4170	18×31.5	ECR1VXX272M□□180031
	3300	0.013	0.038	4080	16×40	ECR1VXX332M□□160040
		0.014	0.038	4220	18×35.5	ECR1VXX332M□□180035
	3900	0.012	0.032	4280	18×40	ECR1VXX392M□□180040
50 (63) 1H	22	0.70	2.8	180	5×11.5	ECR1HXX220M□□050011
	56	0.30	1.2	295	6.3×11.5	ECR1HXX560M□□063011
	100	0.17	0.68	555	8×11.5	ECR1HXX101M□□080011
	120	0.12	0.48	730	8×16	ECR1HXX121M□□080016
	150	0.12	0.48	760	10×12.5	ECR1HXX151M□□100012
	180	0.091	0.36	910	8×20	ECR1HXX181M□□080020
	220	0.084	0.34	1050	10×16	ECR1HXX221M□□100016
	270	0.060	0.24	1220	10×20	ECR1HXX271M□□100020
		0.061	0.20	1260	12.5×16	ECR1HXX271M□□125016
	330	0.055	0.22	1440	10×25	ECR1HXX331M□□100025
	470	0.043	0.17	1690	10×30	ECR1HXX471M□□100030
		0.045	0.15	1660	12.5×20	ECR1HXX471M□□125020
		0.055	0.17	1690	16×16	ECR1HXX471M□□160016
	560	0.034	0.11	1950	12.5×25	ECR1HXX561M□□125025
		0.054	0.15	1930	18×16	ECR1HXX561M□□180016
	680	0.030	0.10	2310	12.5×30	ECR1HXX681M□□125030
	820	0.025	0.083	2510	12.5×35	ECR1HXX821M□□125035
		0.034	0.10	2210	16×20	ECR1HXX821M□□160020
	1000	0.021	0.069	2920	12.5×40	ECR1HXX102M□□125040
		0.025	0.075	2555	16×25	ECR1HXX102M□□160025
	1200	0.036	0.097	2490	18×20	ECR1HXX102M□□180020
		0.022	0.066	3010	16×31.5	ECR1HXX122M□□160031
	1500	0.026	0.070	2740	18×25	ECR1HXX122M□□180025
		0.019	0.057	3150	16×35.5	ECR1HXX152M□□160035
	1800	0.016	0.048	3710	16×40	ECR1HXX182M□□160040
		0.021	0.057	3635	18×31.5	ECR1HXX182M□□180031
	2200	0.017	0.046	3680	18×35.5	ECR1HXX222M□□180035
	2700	0.014	0.038	3800	18×40	ECR1HXX272M□□180040

U <sub>r</sub> (Surge Voltage) Code	Rated Capa- cance	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 <sub>rms</sub> )	(mm)	-
63 (79) 1J	15	2.3	9.3	55	5×11.5	ECR1JXX150M□□050011
	33	1.2	5.0	115	6.3×11.5	ECR1JXX330M□□063011
	56	0.63	2.8	232	8×11.5	ECR1JXX560M□□080011
	82	0.45	2.1	300	8×16	ECR1JXX820M□□080016
		0.43	1.8	288	10×12.5	ECR1JXX820M□□100012
	120	0.33	1.6	362	8×20	ECR1JXX121M□□080020
		0.31	1.5	357	10×16	ECR1JXX121M□□100016
	180	0.21	0.94	466	10×20	ECR1JXX181M□□100020
		0.23	1.1	466	12.5×16	ECR1JXX181M□□125016
	220	0.20	0.84	531	10×25	ECR1JXX221M□□100025
	270	0.15	0.71	663	10×30	ECR1JXX271M□□100030
		0.16	0.64	690	12.5×20	ECR1JXX271M□□125020
		0.14	0.66	795	16×16	ECR1JXX271M□□160016
	330	0.12	0.45	784	12.5×25	ECR1JXX331M□□125025
	390	0.12	0.50	920	18×16	ECR1JXX391M□□180016
	470	0.10	0.42	905	12.5×30	ECR1JXX471M□□125030
	560	0.091	0.38	1040	16×20	ECR1JXX471M□□160020
		0.083	0.35	1050	12.5×35	ECR1JXX561M□□125035
	680	0.073	0.27	1250	16×25	ECR1JXX561M□□160025
		0.071	0.30	1180	12.5×40	ECR1JXX681M□□125040
		0.080	0.30	1240	18×20	ECR1JXX681M□□180020
	820	0.054	0.20	1570	16×31.5	ECR1JXX821M□□160031
		0.057	0.21	1490	18×25	ECR1JXX821M□□180025
	1000	0.045	0.17	1790	16×35.5	ECR1JXX102M□□160035
		0.047	0.17	1630	18×31.5	ECR1JXX102M□□180031
	1200	0.040	0.15	2020	16×40	ECR1JXX122M□□160040
		0.040	0.15	1790	18×35.5	ECR1JXX122M□□180035
	1500	0.036	0.13	2330	18×40	ECR1JXX152M□□180040
100 (125) 2A	6.8	2.3	9.3	55	5×11.5	ECR2AXX68M□□050011
	15	1.2	5.0	115	6.3×11.5	ECR2AXX150M□□063011
	27	0.63	2.8	232	8×11.5	ECR2AXX270M□□080011
	39	0.45	2.1	300	8×16	ECR2AXX390M□□080016
	47	0.43	1.8	288	10×12.5	ECR2AXX470M□□100012
	56	0.33	1.6	362	8×20	ECR2AXX560M□□080020
	68	0.31	1.5	357	10×16	ECR2AXX680M□□100016
	82	0.21	0.94	466	10×20	ECR2AXX820M□□100020
		0.23	1.1	466	12.5×16	ECR2AXX820M□□125016
	100	0.20	0.84	531	10×25	ECR2AXX101M□□100025
	120	0.15	0.71	663	10×30	ECR2AXX121M□□100030
	150	0.16	0.64	690	12.5×20	ECR2AXX121M□□125020
		0.14	0.66	795	16×16	ECR2AXX151M□□160016
	180	0.12	0.45	784	12.5×25	ECR2AXX181M□□125025
		0.12	0.50	920	18×16	ECR2AXX181M□□180016
	220	0.10	0.42	905	12.5×30	ECR2AXX221M□□125030
		0.091	0.38	1040	16×20	ECR2AXX221M□□160020
	270	0.083	0.35	1050	12.5×35	ECR2AXX271M□□125035
		0.073	0.27	1250	16×25	ECR2AXX271M□□160025
	330	0.071	0.30	1180	12.5×40	ECR2AXX331M□□125040
		0.080	0.30	1240	18×20	ECR2AXX331M□□180020
	390	0.054	0.20	1570	16×31.5	ECR2AXX391M□□160031
		0.057	0.21	1490	18×25	ECR2AXX391M□□180025
	470	0.045	0.17	1790	16×35.5	ECR2AXX471M□□160035
		0.047	0.17	1630	18×31.5	ECR2AXX471M□□180031
	560	0.040	0.15	2020	16×40	ECR2AXX561M□□160040
	680	0.040	0.15	1790	18×35.5	ECR2AXX681M□□180035
	820	0.036	0.13	2330	18×40	ECR2AXX821M□□180040

Customer products are available on request.

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## Lifetime Diagram



## Typical Curves

