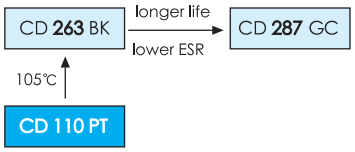
CD 110 PT SERIES

2000h at 85℃

- Standard 85℃
- Load life of 2000 hours at 85℃
- High and stable quality
- Small size and low cost
- For general consumer electrinic products application



Items	Characteristics	
Operating Temperature Range (℃)	-40 ~ +85	-25 ~ +85
Voltage Range (V)	6.3 ~ 250	315 ~ 500
Capacitance Range (μF)	0.1 ~ 22000	
Capacitance Tolerance (20℃, 120Hz)	± 20%	

Leakage Current (μA)

6.3 ~ 100V	160 ~ 500V
After 1 minute at 20℃ application of rated voltage, leakage current is not more than 0.01CV or 3, whichever is greater.	After 2 minutes at 20℃ application of rated voltage, leakage current is not more than 0.03CV + 10

C: Nominal Capacitance (μF) V: Rated Voltage (V)

Dissipation Factor (20℃, 120Hz)

Rated Voltage (V)	6.3	10	16	25	35	50	63	100	160	200	250~350	400	450	500
Tan δ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.12		0.15	0.20	0.23	

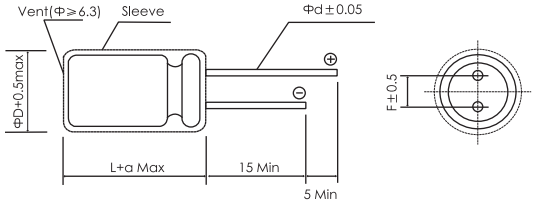
When nominal capacitance is over 1000μF tan δ shall be added 0.02 to the listed value with increase of every 1000μF

Stability at Low Temperature (Impedance Ratio at 120Hz)

Rated Voltage (V)	6.3	10	16	25	35	50	63	100	160	200	250	315~500
$Z_{-25℃} / Z_{+20℃}$	4	3	2						3			6
$Z_{-40℃} / Z_{+20℃}$	8	6	4	3					8			-

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	Φ ⩽ 8 : 3000h Φ ⩾10 : 4000h	Φ ⩽ 8 : 35000h Φ ⩾10 : 50000h	2000h	2000h	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 ± 50% of initial value		Within ± 20% of initial value	Within ± 20% 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 150% of specified value	Not more than 200% of specified value
Condition: Applied Voltage Applied Current Applied Temperature	U_R I_R 85℃	U_R I.4 x I_R 40℃	U_R I_R 85℃	U_R I_R = 0 85℃	U_R = 0 I_R = 0 85℃ After test: U_R to be applied for 30min >24h before measurement

Dimensions mm



ΦD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0		7.5	
Φd	0.5		0.6			0.8	
a	1.5		2.0				

Frequency Coefficient

Rated Voltage (V)	Frequency / CV (μFV)	50/60Hz	120Hz	1kHz	10kHz	100kHz
6.3 ~ 16	ALL CV value	0.80	1.00	1.10	1.20	1.20
25 ~ 35	⩽ 1000	0.80	1.00	1.50	1.70	1.70
	> 1000	0.80	1.00	1.20	1.30	1.30
50 ~ 100	⩽ 1000	0.80	1.00	1.60	1.90	1.90
	> 1000	0.80	1.00	1.20	1.30	1.30
160 ~ 500	ALL CV value	0.80	1.00	1.30	1.50	1.60

Temperature Coefficient

Temperature(℃)	+70	+85
Coefficient	1.35	1

CD 110 PT SERIES

Ratings for CD **110** PT Series

U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Rated Ripple Current 85℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(Ω)	(mArms)	(mm)	-
6.3 (7.2) 0J	220	1.33	200	5×11.5	ECR0JPT221M□□050011
	330	0.88	270	6.3×11.5	ECR0JPT331M□□063011
	470	0.62	322	6.3×11.5	ECR0JPT471M□□063011
	1000	0.29	546	8×11.5	ECR0JPT102M□□080011
	2200	0.14	1010	10×20	ECR0JPT222M□□100020
	3300	0.10	1230	10×20	ECR0JPT332M□□100020
	4700	0.08	1710	12.5×20	ECR0JPT472M□□125020
	6800	0.06	1930	12.5×25	ECR0JPT682M□□125025
	10000	0.05	2450	16×25	ECR0JPT103M□□160025
	15000	0.04	2860	16×35.5	ECR0JPT153M□□160035
	22000	0.04	3340	18×40	ECR0JPT223M□□180040
10 (13) 1A	47	5.36	99	5×11.5	ECR1APT470M□□050011
	100	2.52	146	5×11.5	ECR1APT101M□□050011
	220	1.15	240	6.3×11.5	ECR1APT221M□□063011
	330	0.76	290	6.3×11.5	ECR1APT331M□□063011
	470	0.54	417	8×11.5	ECR1APT471M□□080011
	1000	0.25	650	10×12.5	ECR1APT102M□□100012
	2200	0.13	1080	10×20	ECR1APT222M□□100020
	3300	0.09	1430	12.5×20	ECR1APT332M□□125020
	4700	0.07	1780	12.5×25	ECR1APT472M□□125025
	6800	0.06	2220	16×25	ECR1APT682M□□160025
	10000	0.05	2700	16×35.5	ECR1APT103M□□160035
	15000	0.04	3100	18×35.5	ECR1APT153M□□180035
16 (20) 1C	10	21.2	50	5×11.5	ECR1CPT100M□□050011
	22	9.65	75	5×11.5	ECR1CPT220M□□050011
	33	6.43	92	5×11.5	ECR1CPT330M□□050011
	47	4.52	110	5×11.5	ECR1CPT470M□□050011
	100	2.12	160	5×11.5	ECR1CPT101M□□050011
	220	0.97	264	6.3×11.5	ECR1CPT221M□□063011
	330	0.64	383	8×11.5	ECR1CPT331M□□080011
	470	0.45	457	8×11.5	ECR1CPT471M□□080011
	1000	0.21	791	10×16	ECR1CPT102M□□100016
	2200	0.11	1350	12.5×20	ECR1CPT222M□□125020
	3300	0.08	1690	12.5×25	ECR1CPT332M□□125025
	4700	0.06	2100	16×25	ECR1CPT472M□□160025
	6800	0.05	2580	16×35.5	ECR1CPT682M□□160035
	10000	0.05	3130	18×35.5	ECR1CPT103M□□180035
25 (32) 1E	4.7	39.5	38	5×11.5	ECR1EPT4R7M□□050011
	10	18.6	55	5×11.5	ECR1EPT100M□□050011
	22	8.44	82	5×11.5	ECR1EPT220M□□050011
	33	5.63	100	5×11.5	ECR1EPT330M□□050011
	47	3.95	118	5×11.5	ECR1EPT470M□□050011
	100	1.86	199	6.3×11.5	ECR1EPT101M□□063011
	220	0.84	349	8×11.5	ECR1EPT221M□□080011
	330	0.56	510	10×12.5	ECR1EPT331M□□100012
	470	0.40	545	10×12.5	ECR1EPT471M□□100012
	1000	0.19	996	10×20	ECR1EPT102M□□100020
	2200	0.10	1660	12.5×25	ECR1EPT222M□□125025
	3300	0.07	2030	16×25	ECR1EPT332M□□160025
	4700	0.06	2650	16×31.5	ECR1EPT472M□□160031
	6800	0.05	3290	18×35.5	ECR1EPT682M□□180035
35 (44) 1V	4.7	33.9	40	5×11.5	ECR1VPT4R7M□□050011
	10	15.9	59	5×11.5	ECR1VPT100M□□050011
	22	7.24	87	5×11.5	ECR1VPT220M□□050011
	33	4.83	107	5×11.5	ECR1VPT330M□□050011
	47	3.39	130	5×11.5	ECR1VPT470M□□050011
	100	1.59	214	6.3×11.5	ECR1VPT101M□□063011
	220	0.72	443	8×11.5	ECR1VPT221M□□080011
	330	0.48	542	10×12.5	ECR1VPT331M□□100012
	470	0.34	664	10×16	ECR1VPT471M□□100016
	1000	0.16	1210	12.5×20	ECR1VPT102M□□125020
	2200	0.08	1950	16×25	ECR1VPT222M□□160025
	3300	0.06	2510	16×35.5	ECR1VPT332M□□160035
	4700	0.05	2990	18×35.5	ECR1VPT472M□□180035

U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Rated Ripple Current 85℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(Ω)	(mArms)	(mm)	-
50 (63) 1H	0.1	1327	3	5×11.5	ECR1HPT0R1M□□050011
	0.22	603	6	5×11.5	ECR1HPTR22M□□050011
	0.33	402	9	5×11.5	ECR1HPTR33M□□050011
	0.47	282	13	5×11.5	ECR1HPTR47M□□050011
	1	133	21	5×11.5	ECR1HPT010M□□050011
	2.2	60.3	31	5×11.5	ECR1HPT2R2M□□050011
	3.3	40.2	38	5×11.5	ECR1HPT3R3M□□050011
	4.7	28.2	45	5×11.5	ECR1HPT4R7M□□050011
	10	13.3	66	5×11.5	ECR1HPT100M□□050011
	22	6.03	98	5×11.5	ECR1HPT220M□□050011
	33	4.02	126	5×11.5	ECR1HPT330M□□050011
	47	2.82	155	6.3×11.5	ECR1HPT470M□□063011
	100	1.33	260	8×11.5	ECR1HPT101M□□080011
	220	0.60	443	10×12.5	ECR1HPT221M□□100012
	330	0.40	595	10×16	ECR1HPT331M□□100016
	470	0.28	887	12.5×20	ECR1HPT471M□□125020
	1000	0.13	1400	16×25	ECR1HPT102M□□160025
	2200	0.07	2340	16×35.5	ECR1HPT222M□□160035
	3300	0.06	2810	18×35.5	ECR1HPT332M□□180035
63 (79) 1J	4.7	25.4	45	5×11.5	ECR1JPT4R7M□□050011
	10	11.9	66	5×11.5	ECR1JPT100M□□050011
	22	5.43	100	5×11.5	ECR1JPT220M□□050011
	33	3.62	140	6.3×11.5	ECR1JPT330M□□063011
	47	2.54	170	6.3×11.5	ECR1JPT470M□□063011
	100	1.19	300	10×12.5	ECR1JPT101M□□100012
	220	0.54	470	10×16	ECR1JPT221M□□100016
	330	0.36	710	10×20	ECR1JPT331M□□100020
	470	0.25	900	12.5×20	ECR1JPT471M□□125020
	1000	0.12	1300	16×25	ECR1JPT102M□□160025
100 (125) 2A	0.1	1062	2.1	5×11.5	ECR2APT0R1M□□050011
	0.22	483	4.7	5×11.5	ECR2APTR22M□□050011
	0.33	322	7	5×11.5	ECR2APTR33M□□050011
	0.47	226	10	5×11.5	ECR2APTR47M□□050011
	1	106.2	21	5×11.5	ECR2APT010M□□050011
	2.2	48.3	30	5×11.5	ECR2APT2R2M□□050011
	3.3	32.2	40	5×11.5	ECR2APT3R3M□□050011
	4.7	22.6	45	5×11.5	ECR2APT4R7M□□050011
	10	10.6	75	6.3×11.5	ECR2APT100M□□063011
	22	4.83	130	6.3×11.5	ECR2APT220M□□063011
	33	3.22	180	8×11.5	ECR2APT330M□□080011
	47	2.26	230	10×12.5	ECR2APT470M□□100012
	100	1.06	370	10×20	ECR2APT101M□□100020
	220	0.48	620	12.5×25	ECR2APT221M□□125025
	330	0.32	760	16×25	ECR2APT331M□□160025
	470	0.23	1000	16×25	ECR2APT471M□□160025
	1000	0.11	1380	18×40	ECR2APT102M□□180040
160 (200) 2C	0.47	339	15	6.3×11.5	ECR2CPTR47M□□063011
	1	159	22	6.3×11.5	ECR2CPT010M□□063011
	2.2	72.4	32	6.3×11.5	ECR2CPT2R2M□□063011
	3.3	48.3	40	6.3×11.5	ECR2CPT3R3M□□063011
	4.7	33.9	48	6.3×11.5	ECR2CPT4R7M□□063011
	10	15.9	81	8×11.5	ECR2CPT100M□□080011
	22	7.24	151	10×16	ECR2CPT220M□□100016
	33	4.83	202	10×20	ECR2CPT330M□□100020
	47	3.39	266	12.5×20	ECR2CPT470M□□125020
	100	1.59	422	12.5×25	ECR2CPT101M□□125025
	220	0.72	783	16×31.5	ECR2CPT221M□□160031
	330	0.48	1080	18×31.5	ECR2CPT331M□□180031

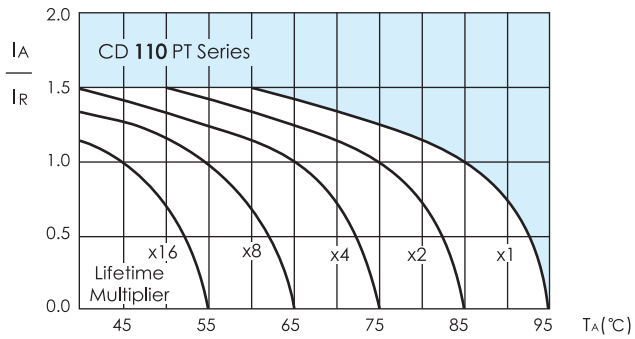
Ratings for CD **110** PT Series

U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Rated Ripple Current 85℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(Ω)	(mArms)	(mm)	-
200 (250) 2D	0.47	339	15	6.3×11.5	ECR2DPTR47M□□063011
	1	159	22	6.3×11.5	ECR2DPT010M□□063011
	2.2	72.4	32	6.3×11.5	ECR2DPT2R2M□□063011
	3.3	48.3	40	6.3×11.5	ECR2DPT3R3M□□063011
	4.7	33.9	56	8×11.5	ECR2DPT4R7M□□080011
	10	15.9	94	8×11.5	ECR2DPT100M□□080011
	22	7.24	170	10×20	ECR2DPT220M□□100020
	33	4.83	223	12.5×20	ECR2DPT330M□□125020
	47	3.39	265	12.5×20	ECR2DPT470M□□125020
	100	1.59	483	16×25.5	ECR2DPT101M□□160025
	220	0.72	882	18×36	ECR2DPT221M□□180036
250 (300) 2E	0.47	423	15	6.3×11.5	ECR2EPTR47M□□063011
	1	199	22	6.3×11.5	ECR2EPT010M□□063011
	2.2	90.5	32	6.3×11.5	ECR2EPT2R2M□□063011
	3.3	60.3	48	8×11.5	ECR2EPT3R3M□□080011
	4.7	42.3	56	8×11.5	ECR2EPT4R7M□□080011
	10	19.9	101	10×12.5	ECR2EPT100M□□100012
	22	9.05	182	10×20	ECR2EPT220M□□100020
	33	6.03	243	12.5×20	ECR2EPT330M□□125020
	47	4.23	295	12.5×25	ECR2EPT470M□□125025
	100	1.99	528	16×31.5	ECR2EPT101M□□160031
315 (350) 2F	0.47	423	15	6.3×11.5	ECR2FPTR47M□□063011
	1	199	22	6.3×11.5	ECR2FPT010M□□063011
	2.2	90.5	38	8×11.5	ECR2FPT2R2M□□080011
	3.3	60.3	53	10×12.5	ECR2FPT3R3M□□100012
	4.7	42.3	65	10×12.5	ECR2FPT4R7M□□100012
	10	19.9	115	10×16	ECR2FPT100M□□100016
	22	9.05	182	12.5×20	ECR2FPT220M□□125020
	33	6.03	277	16×25.5	ECR2FPT330M□□160025
	47	4.23	330	16×25.5	ECR2FPT470M□□160025
	100	1.99	567	18×31.5	ECR2FPT101M□□180031
350 (400) 2V	0.47	423.5	15	6.3×11.5	ECR2VPTR47M□□063011
	1	199	22	6.3×11.5	ECR2VPT010M□□063011
	2.2	90.5	38	6.3×11.5	ECR2VPT2R2M□□063011
	3.3	60.3	53	8×11.5	ECR2VPT3R3M□□080011
	4.7	42.3	65	10×12.5	ECR2VPT4R7M□□100012
	10	19.9	115	10×20	ECR2VPT100M□□100020
	22	9.05	197	12.5×20	ECR2VPT220M□□125020
	33	6.03	277	12.5×25	ECR2VPT330M□□125025
	47	4.23	330	16×25.5	ECR2VPT470M□□160025
	100	1.99	507	18×31.5	ECR2VPT101M□□180031

U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Rated Ripple Current 85℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(Ω)	(mArms)	(mm)	-
400 (450) 2G	0.47	565	15	6.3×11.5	ECR2GPTR47M□□063011
	1	265	22	6.3×11.5	ECR2GPT010M□□063011
	2.2	121	38	8×11.5	ECR2GPT2R2M□□080011
	3.3	80.4	54	10×12.5	ECR2GPT3R3M□□100012
	4.7	56.5	71	10×12.5	ECR2GPT4R7M□□100012
	10	26.5	123	10×20	ECR2GPT100M□□100020
	22	12.1	197	12.5×25	ECR2GPT220M□□125025
	33	8.04	277	16×25.5	ECR2GPT330M□□160025
	47	5.65	361	16×25.5	ECR2GPT470M□□160025
	68	3.9	423	18×25.5	ECR2GPT680M□□180025
	82	3.2	509	18×31.5	ECR2GPT820M□□180031
	100	2.7	595	18×36	ECR2GPT101M□□180036
450 (500) 2W	0.47	649	18	6.3×11.5	ECR2WPTR47M□□063011
	1	305	25	6.3×11.5	ECR2WPT010M□□063011
	2.2	139	43	8×11.5	ECR2WPT2R2M□□080011
	3.3	92.5	59	10×12.5	ECR2WPT3R3M□□100012
	4.7	64.9	76	10×16	ECR2WPT4R7M□□100016
	10	30.5	123	10×20	ECR2WPT100M□□100020
	22	13.9	226	12.5×25	ECR2WPT220M□□125025
	33	9.2	304	16×25.5	ECR2WPT330M□□160025
	47	6.5	380	16×31.5	ECR2WPT470M□□160031
	68	4.5	436	18×25.5	ECR2WPT680M□□180025
	82	3.7	530	18×31.5	ECR2WPT820M□□180031
	100	2.6	610	18×36	ECR2WPT101M□□180036
500 (550) 2H	1	305	35	10×12.5	ECR2HPT010M□□100012
	2.2	139	45	10×16	ECR2HPT2R2M□□100016
	3.3	92.5	75	10×20	ECR2HPT3R3M□□100020
	4.7	64.9	100	12.5×20	ECR2HPT4R7M□□125020
	10	30.5	165	12.5×25	ECR2HPT100M□□125025

Customer products are available on request.

Lifetime Diagram



I_A = actual ripple current at 120Hz, I_R = rated ripple current at 120Hz, 85℃
Multiplier of Useful Life as a function of ambient temperature and ripple current load

MINIATURE