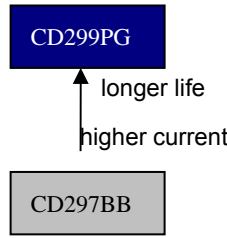




CD 299 PG SERIES

7000h at 105°C

- Extended Lifetime at 105°C
- High Ripple Current
- High Professional Industrial Power Supplies



Items	Characteristics						
Operating Temperature Range(°C)	-40 ~ +105	-25~+105					
Voltage Range (V)	160~250	315~500					
Capacitance Range(µF)	39~2200						
Capacitance Tolerance (20°C, 120Hz)	±20%						
Leakage Current (µA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 1.5mA, whichever is smaller C: Nominal Capacitance(µF) V: Rated Voltage(V)						
Dissipation Factor (20°C, 120Hz)	Rated Voltage(V)	160 180 200 250 315 350 400 450~500					
	Tan δ(max)	0.15					
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage(V)	≤250	315~500				
	Z _{-25°C} /Z _{+20°C}	3	8				
	Z _{-40°C} /Z _{+20°C}	12	-				

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	9000h	> 200000h	7000h	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 ±30% 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 200% of specified value	Not more than 200% of specified value
Condition: Applied Voltage Applied Current Applied Temperature	U _R I _R 105°C	U _R 1.4 × I _R 50°C	U _R I _R 105°C	U _R I _R = 0 105°C	U _R = 0 I _R = 0 105°C After test: U _R to be applied for 30min>24h before measurement

Frequency Coefficient

Frequency Rated Voltage(v)	50/60Hz	120Hz	300Hz	1kHz	10kHz	≥40kHz
160~250	0.80	1.00	1.17	1.30	1.45	1.50
≥315	0.80	1.00	1.16	1.30	1.43	1.45

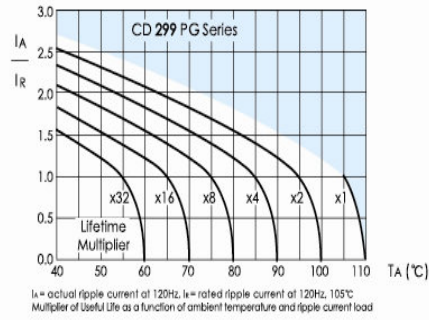
Temperature Coefficient

Temperature(°C)	+40	+55	+70	+80	+105
Coefficient	2.7	2.5	2.1	1.7	1.0

CD 299 PG SERIES

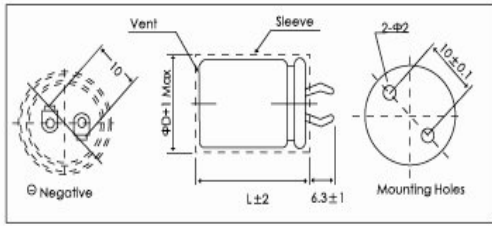


Lifetime Diagram



Dimensions

mm



Ratings for CD299 PG Series

U_R (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦDxL	P/N
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
160 (200) 2C	270	737	516	1.1	22x25	ECS2CPG271M□□220025
	330	603	422	1.2	22x30	ECS2CPG331M□□220030
	390	510	357	1.3	25x25	ECS2CPG391M□□250025
	470	424	296	1.4	22x35	ECS2CPG471M□□220035
		424	296	1.4	25x30	ECS2CPG471M□□250030
	560	355	249	1.5	22x40	ECS2CPG561M□□220040
		355	249	1.5	30x25	ECS2CPG561M□□300025
	680	293	205	1.7	22x45	ECS2CPG681M□□220045
		293	205	1.7	25x35	ECS2CPG681M□□250035
	820	243	170	2	25x40	ECS2CPG821M□□250040
		199	139	2.2	25x45	ECS2CPG102M□□250045
	1000	199	139	2.2	30x35	ECS2CPG102M□□300035
		1200	166	116	2.3	25x50
	166		116	2.3	30x40	ECS2CPG122M□□300040
	166		116	2.3	35x35	ECS2CPG122M□□350035
	1500	133	93	2.5	30x45	ECS2CPG152M□□300045
		133	93	2.5	35x40	ECS2CPG152M□□350040
	1800	111	77	2.7	30x50	ECS2CPG182M□□300050
		111	77	2.7	35x45	ECS2CPG182M□□350045
	2200	91	63	2.9	35x50	ECS2CPG222M□□350050
180 (225) 2K	220	905	633	1	22x25	ECS2KPG221M□□220025
	330	603	422	1.2	22x30	ECS2KPG331M□□220030
		603	422	1.2	25x25	ECS2KPG331M□□250025
	470	424	296	1.4	22x35	ECS2KPG471M□□220035
		424	296	1.4	25x30	ECS2KPG471M□□250030
	560	424	296	1.4	30x25	ECS2KPG471M□□300025
		355	249	1.5	22x40	ECS2KPG561M□□220040
	680	355	249	1.5	25x35	ECS2KPG561M□□250035
		293	205	1.7	22x50	ECS2KPG681M□□220050
	820	293	205	1.7	25x40	ECS2KPG681M□□250040
		293	205	1.7	30x30	ECS2KPG681M□□300030
	1000	243	170	2	25x45	ECS2KPG821M□□250045
		243	170	2	30x35	ECS2KPG821M□□300035
	1200	243	170	2	35x30	ECS2KPG821M□□350030
		199	139	2.2	30x40	ECS2KPG102M□□300040
	1500	166	116	2.3	30x45	ECS2KPG122M□□300045
		166	116	2.2	35x35	ECS2KPG122M□□350035
	1800	133	93	2.5	30x50	ECS2KPG152M□□300050
		133	93	2.5	35x40	ECS2KPG152M□□350040
	2200	111	77	2.7	35x45	ECS2KPG182M□□350045
2200	91	63	2.9	35x50	ECS2KPG222M□□350050	
200 (250)	220	905	633	1	22x25	ECS2DPG221M□□220025
	270	737	516	1.1	22x30	ECS2DPG271M□□220030

U_R (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦDxL	P/N
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
315 (365) 2F	150	1327	730	0.82	22x35	ECS2FPG151M□□220035
		1327	730	0.82	25x30	ECS2FPG151M□□250030
		1327	730	0.82	30x25	ECS2FPG151M□□300025
	180	1106	608	0.9	22x40	ECS2FPG181M□□220040
		1106	608	0.9	25x35	ECS2FPG181M□□250035
	220	905	498	1	22x45	ECS2FPG221M□□220045
		905	498	1	25x40	ECS2FPG221M□□250040
	270	905	498	1	30x30	ECS2FPG221M□□300030
		737	406	1.1	25x45	ECS2FPG271M□□250045
	330	737	406	1.1	30x35	ECS2FPG271M□□300035
		737	406	1.1	35x30	ECS2FPG271M□□350030
	390	603	332	1.2	25x50	ECS2FPG331M□□250050
		603	332	1.2	30x40	ECS2FPG331M□□300040
	470	510	281	1.3	30x45	ECS2FPG391M□□300045
		510	281	1.3	35x35	ECS2FPG391M□□350035
	560	424	233	1.4	30x50	ECS2FPG471M□□300050
		424	233	1.4	35x40	ECS2FPG471M□□350040
	680	355	196	1.5	35x45	ECS2FPG561M□□350045
		293	161	1.7	35x50	ECS2FPG681M□□350050
	350 (400) 2V	82	2427	1335	0.64	22x25
100		1990	1095	0.69	22x30	ECS2VPG101M□□220030
		1990	1095	0.69	25x25	ECS2VPG101M□□250025
120		1659	912	0.75	22x35	ECS2VPG121M□□220035
		1659	912	0.75	25x30	ECS2VPG121M□□250030
150		1327	730	0.82	22x40	ECS2VPG151M□□220040
		1327	730	0.82	30x25	ECS2VPG151M□□300025
180		1106	608	0.9	22x45	ECS2VPG181M□□220045
		1106	608	0.9	25x35	ECS2VPG181M□□250035
220		1106	608	0.9	30x30	ECS2VPG181M□□300030
		905	498	1	22x50	ECS2VPG221M□□220050
270		905	498	1	25x40	ECS2VPG221M□□250040
		737	406	1.1	25x50	ECS2VPG271M□□250050
330		737	406	1.1	30x35	ECS2VPG271M□□300035
		737	406	1.1	35x30	ECS2VPG271M□□350030
390		603	332	1.2	30x45	ECS2VPG331M□□300045
		603	332	1.2	35x35	ECS2VPG331M□□350035
560		510	281	1.3	30x50	ECS2VPG391M□□300050
		510	281	1.3	35x40	ECS2VPG391M□□350040
400 (450) 2G		56	3554	1955	0.51	22x25
	68	2927	1610	0.56	22x30	ECS2GPG680M□□220030
82		2927	1610	0.56	25x25	ECS2GPG680M□□250025
100	2427	1335	0.64	22x35	ECS2GPG820M□□220035	
100	1990	1095	0.69	25x30	ECS2GPG101M□□250030	



CD 299 PG SERIES

250 (300) 2E	390	737	516	1.1	25x25	ECS2DPG271M□□250025	450 (500) 2W	120	1659	912	0.75	22x40	ECS2GPG121M□□220040		
		510	357	1.3	22x35	ECS2DPG391M□□220035			1659	912	0.75	25x35	ECS2GPG121 M□□250035		
		510	357	1.3	25x30	ECS2DPG391M□□250030			1659	912	0.75	30x25	ECS2GPG121M□□300025		
		510	357	1.3	30X25	ECS2DPG391M□□300025			150	1327	730	0.82	22X50	ECS2GPG151 M□□220050	
	470	424	296	1.4	22x40	ECS2DPG471M□□220040		1327		730	0.82	25x40	ECS2GPG151M□□250040		
		424	296	1.4	25x35	ECS2DPG471M□□250035		1327		730	0.82	30x30	ECS2GPG151M□□300030		
		424	296	1.4	30x30	ECS2DPG471M□□300030		180	1106	608	0.9	25x45	ECS2GPG181M□□250045		
	560	355	249	1.5	22x45	ECS2DPG561M□□220045			1106	608	0.9	30x35	ECS2GPG181 M□□300035		
	680	293	205	1.7	25x40	ECS2DPG681M□□250040		1106	608	0.9	35x25	ECS2GPG181 M□□350025			
		293	205	1.7	30X35	ECS2DPG681 M□□300035		220	905	498	1	25x50	ECS2 GPG221M□□250050		
	820	243	170	2	25x50	ECS2DPG821M□□250050			905	498	1	30X40	ECS2 GPG221M□□300040		
		243	170	2	30x40	ECS2DPG821M□□300040			905	498	1	35x30	ECS2 GPG221M□□350030		
		243	170	2	35x30	ECS2DPG821M□□350030		270	737	406	1.1	30x45	ECS2 GPG271M□□300045		
	1000	199	139	2.2	30x45	ECS2DPG102M□□300045			737	406	1.1	35x35	ECS2GPG271 M□□350035		
		199	139	2.2	35X35	ECS2DPG102M□□350035		330	603	332	1.2	30x50	ECS2 GPG331M□□300050		
	1200	166	116	2.3	30x50	ECS2DPG122M□□300050			603	332	1.2	35x40	ECS2 GPG331M□□350040		
		166	116	2.3	35x40	ECS2DPG122M□□350040		390	510	281	1.3	35x45	ECS2GPG391 M□□350045		
	1500	133	93	2.5	35x50	ECS2DPG152M□□350050		470	424	233	1.4	35X50	ECS2GPG471 M□□350050		
	250 (300) 2E	180	1106	774	0.9	22x30		ECS2EPG181M□□220030	450 (500) 2W	39	6805	3062	0.37	22x25	ECS2WPG390M□□220025
		220	905	633	1	25X25		ECS2EPG221M□□250025		47	5647	2541	0.4	22X30	ECS2WPG470M□□220030
270		737	516	1.1	22x35	ECS2EPG271 M□□220035	56	4739		2133	0.47	22x35	ECS2WPG560M□□220035		
		737	516	1.1	25X30	ECS2EPG271M□□250030		4739		2133	0.47	25x25	ECS2WPG560M□□250025		
		737	516	1.1	30x25	ECS2EPG271M□□300025	68	3903		1756	0.53	22x40	ECS2WPG680M□□220040		
330		603	422	1.2	22x40	ECS2EPG331M□□220040		3903		1756	0.53	25x30	ECS2WPG680M□□250030		
		603	422	1.2	25x35	ECS2EPG331M□□250035	82	3237		1456	0.56	22x45	ECS2WPG820M□□220045		
390		510	357	1.3	22x45	ECS2EPG391M□□220045		3237		1456	0.56	25x35	ECS2WPG820M□□250035		
		510	357	1.3	25x40	ECS2EPG391M□□250040		3237		1456	0.56	30X25	ECS2WPG820M□□300025		
		510	357	1.3	30x30	ECS2EPG391M□□300030	100	2654		1194	0.64	22x50	ECS2WPG101M□□220050		
470		424	296	1.4	25x45	ECS2EPG471M□□250045		2654		1194	0.64	25x40	ECS2WPG101M□□250040		
		424	296	1.4	30x35	ECS2EPG471M□□300035		2654		1194	0.64	30x30	ECS2WPG101 M□□300030		
		424	296	1.4	35X30	ECS2EPG471M□□350030	120	2212		995	0.72	25x45	ECS2WPG121M□□250045		
560		355	249	1.5	25x50	ECS2EPG561M□□250050	150	1769		796	0.79	25X50	ECS2WPG151M□□250050		
680		293	205	1.7	30x45	ECS2EPG681M□□300045		1769		796	0.79	30x40	ECS2WPG151M□□300040		
		293	205	1.7	35x35	ECS2EPG681M□□350035		1769		796	0.79	35X30	ECS2WPG151M□□350030		
820		243	170	2	30x50	ECS2EPG821M□□300050	180	1474		664	0.87	30x45	ECS2WPG181 M□□300045		
		243	170	2	35x40	ECS2EPG821M□□350040		1474		664	0.87	35X35	ECS2WPG181M□□350035		
1000	199	139	2.2	35x45	ECS2EPG102M□□350045	220	1206	543	1	30x50	ECS2WPG221M□□300050				
1200	166	116	2.3	35X50	ECS2EPG122M□□350050		1206	543	1	35x40	ECS2WPG221M□□350040				
315 (365) 2F	82	2427	1335	0.64	22x25	ECS2FPG820M□□220025	270	983	442	1.19	35x45	ECS2WPG271M□□350045			
	100	1990	1095	0.69	22x30	ECS2FPG101M□□220030	330	804	362	1.38	35X50	ECS2WPG331M□□350050			
	120	1659	912	0.75	25x25	ECS2FPG121M□□250025									

Ratings for CD299 PG Series

U _R (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦDxL	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
500 (550) 2H	47	5647	2823	0.41	22x30	ECS2HPG470M□□220030
	56	4739	2370	0.47	22x30	ECS2HBB560M□□220030
	68	3903	1951	0.54	22x35	ECS2HBB680M□□220035
		3903	1951	0.54	25x30	ECS2HBB680M□□250030
	82	3237	1618	0.62	22x40	ECS2HBB820M□□220040
		3237	1618	0.62	25x35	ECS2HBB820M□□250035
	100	2654	1327	0.67	22x45	ECS2HBB101M□□220045
		2654	1327	0.67	25x40	ECS2HBB101M□□250040
		2654	1327	0.67	30x30	ECS2HBB101M□□300030
	120	2212	1106	0.77	22x50	ECS2HBB121M□□220050
		2212	1106	0.74	25x40	ECS2HBB121M□□250040
		2212	1106	0.77	30x35	ECS2HBB121M□□300035
		2212	1106	0.80	35x30	ECS2HBB121M□□350030
	150	1769	885	0.82	25x45	ECS2HBB151M□□250045

CD 299 PG SERIES



		1769	885	0.85	30x40	ECS2HBB151M□□300040
		1769	885	0.85	35x35	ECS2HBB151M□□350035
180		1474	737	0.98	25x50	ECS2HBB181M□□250050
		1474	737	1.01	30x45	ECS2HBB181M□□300045
220		1206	603	1.12	30x50	ECS2HBB221M□□300050
		1206	603	1.12	35x40	ECS2HBB221M□□350040
270		983	492	1.25	30x50	ECS2HBB271M□□300050
		983	492	1.25	35x45	ECS2HBB271M□□350045
330		804	402	1.36	35x50	ECS2HBB331M□□350050

Customer products are available on request.