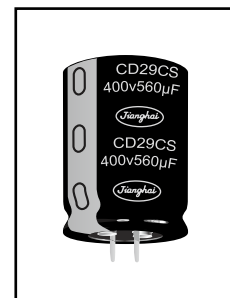
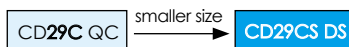


CD29CS DS SERIES



2000h at 105°C

- Load life 2000 hours at 105°C
- High ripple current
- Downsized from CD29C

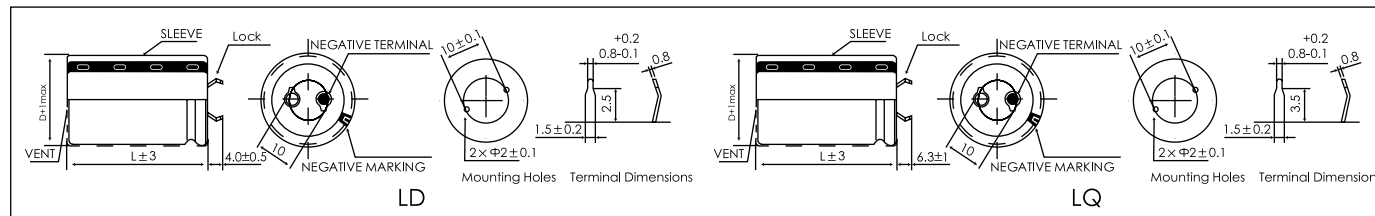


Items	Characteristics		
Operating Temperature Range (°C)	-25 ~ +105		
Voltage range (V)	400 ~ 475		
Capacitance Range (μF)	270 ~ 2850		
Capacitance Tolerance (20°C, 120Hz)	± 20%		
Leakage Current (μA)	After 5min at 20°C application of rated voltage, leakage current is not more than $0.06 \times C \times \sqrt{V}$ C: Nominal capacitance (μF) V: Rated Voltage (V)		
Dissipation Factor (20°C, 120Hz)	Rated Voltage (V)	400	420~475
	Tan δ (max)	0.15	0.20
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	400~475	
	$Z_{-25^{\circ}\text{C}} / Z_{+20^{\circ}\text{C}}$	8	

	Useful Life		Load Life	Endurance Test	Shelf Life
Life Time	4000h	≥ 180000h	2000h	3000h	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 130% 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 $1.4 \times I_R$ 40°C	U_R I_R 105°C	U_R $I_R = 0$ 105°C	After test: U_R to be applied for 30 min > 24h before measurement $I_R = 0$ 105°C

Dimensions

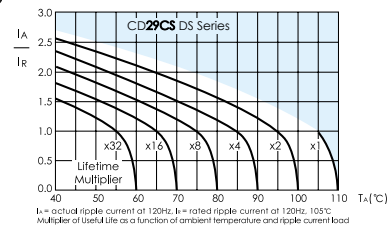
mm



Frequency Coefficient

Frequency Voltage (V)	50/60Hz	120Hz	300Hz	1kHz	10kHz	≥ 50kHz
400 ~ 450	0.80	1.00	1.16	1.30	1.41	1.43

Life Time Diagram



Temperature Coefficient

Temperature (°C)	+40	+55	+70	+85	+105
Coefficient	2.7	2.5	2.1	1.7	1.0

Ratings for CD29CS DS Series

U _r (Surge Voltage) Code	Rated Capaci- tance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N	
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-	
400 (450) 2G	270	737	383	1.43	25X30	ECS2GDS271M □□ 250030	
	330	603	314	1.77	22X45	ECS2GDS331M □□ 220045	
		603	314	1.65	25X35	ECS2GDS331M □□ 250035	
	390	510	265	1.97	22X50	ECS2GDS391M □□ 220050	
		510	265	1.85	25X40	ECS2GDS391M □□ 250040	
		510	265	1.65	30X30	ECS2GDS391M □□ 300030	
	470	424	220	2.07	25X45	ECS2GDS471M □□ 250045	
		424	220	1.89	30X35	ECS2GDS471M □□ 300035	
	560	355	185	2.12	30X40	ECS2GDS561M □□ 300040	
	680	293	153	2	30X45	ECS2GDS681M □□ 300045	
820	242	126	2.48	30X50	ECS2GDS821M □□ 300050		
420 (470) 2X	270	983	472	1.27	22X40	ECS2XDS271M □□ 220040	
		983	472	1.28	25X30	ECS2XDS271M □□ 250030	
		983	472	1.28	30X25	ECS2XDS271M □□ 300025	
	330	804	402	1.44	22X45	ECS2XDS331M □□ 220045	
		804	402	1.48	25X35	ECS2XDS331M □□ 250035	
	390	681	340	1.63	22X55	ECS2XDS391M □□ 220055	
		681	340	1.64	25X40	ECS2XDS391M □□ 250040	
		681	340	1.55	30X30	ECS2XDS391M □□ 300030	
	470	565	282	1.86	25X50	ECS2XDS471M □□ 250050	
		565	282	1.74	30X35	ECS2XDS471M □□ 300035	
	560	472	237	2.09	25X55	ECS2XDS561M □□ 250055	
		472	237	1.96	30X40	ECS2XDS561M □□ 300040	
	680	391	196	2.25	30X50	ECS2XDS681M □□ 300050	
	820	324	162	2.52	30X55	ECS2XDS821M □□ 300055	
	450 (500) 2W	410	482	241	1.40	30X30	ECS2WDS411M □□ 300030
		460	436	218	1.51	32X30	ECS2WDS461M □□ 320030
		510	398	199	1.64	30X35	ECS2WDS511M □□ 300035
		560	368	184	1.71	35X30	ECS2WDS561M □□ 350030
580		356	178	1.78	32X35	ECS2WDS581M □□ 320035	
610		342	171	1.87	30X40	ECS2WDS611M □□ 300040	
690		306	153	2.03	32X40	ECS2WDS691M □□ 320040	
		306	153	2.00	35X35	ECS2WDS691M □□ 350035	
710		302	151	2.10	30X45	ECS2WDS711M □□ 300045	
800		272	136	2.26	32X45	ECS2WDS801M □□ 320045	
810		268	134	2.33	30X50	ECS2WDS811M □□ 300050	
830		262	131	2.28	35X40	ECS2WDS831M □□ 350040	
910		242	121	2.55	30X55	ECS2WDS911M □□ 300055	
		242	121	2.51	32X50	ECS2WDS911M □□ 320050	
960		232	116	2.55	35X45	ECS2WDS961M □□ 350045	
1000		222	111	2.77	30X60	ECS2WDS102M □□ 300060	
1020		218	109	2.75	32X55	ECS2WDS108M □□ 320055	
1090		208	104	2.81	35X50	ECS2WDS109M □□ 350050	
1100		206	103	2.98	30X65	ECS2WDS112M □□ 300065	
1130		200	100	2.98	32X60	ECS2WDS11CM □□ 320060	
1180		194	97	3.03	35X55	ECS2WDS11HM □□ 350055	
1200		190	95	3.17	32X65	ECS2WDS122M □□ 320065	
1210		188	94	3.23	30X70	ECS2WDS12AM □□ 300070	
1250		184	92	3.37	30X75	ECS2WDS12EM □□ 300075	
1300		178	89	3.39	32X70	ECS2WDS132M □□ 320070	
1310		176	88	3.31	35X60	ECS2WDS13AM □□ 350060	
1350		172	86	3.59	30X80	ECS2WDS13EM □□ 300080	
1410		166	83	3.62	32X75	ECS2WDS14AM □□ 320075	
1440		164	82	3.78	30X85	ECS2WDS14DM □□ 300085	
		164	82	3.55	35X65	ECS2WDS14DM □□ 350065	
1520		156	78	3.85	32X80	ECS2WDS158M □□ 320080	
1540		154	77	4.00	30X90	ECS2WDS15DM □□ 300090	
1560		152	76	3.81	35X70	ECS2WDS15FM □□ 350070	
1630		148	74	4.19	30X95	ECS2WDS16CM □□ 300095	
		148	74	4.06	32X85	ECS2WDS16CM □□ 320085	
1690		142	71	4.06	35X75	ECS2WDS16JM □□ 350075	
1730		140	70	4.41	30X100	ECS2WDS17CM □□ 300100	
		140	70	4.29	32X90	ECS2WDS17CM □□ 320090	
1820		134	67	4.61	30X105	ECS2WDS18BM □□ 300105	
		134	67	4.31	35X80	ECS2WDS18BM □□ 350080	
1840	132	66	4.52	32X95	ECS2WDS18DM □□ 320095		
1920	130	65	4.78	30X110	ECS2WDS19BM □□ 300110		
1950	128	64	4.71	32X100	ECS2WDS19EM □□ 320100		
	128	64	4.53	35X85	ECS2WDS19EM □□ 350085		
2010	124	62	5.00	30X115	ECS2WDS20AM □□ 300115		
2060	122	61	4.93	32X105	ECS2WDS20FM □□ 320105		
2080	122	61	4.76	35X90	ECS2WDS20HM □□ 350090		
2110	120	60	5.19	30X120	ECS2WDS21AM □□ 300120		
2160	118	59	5.12	32X110	ECS2WDS21FM □□ 320110		

U _R (Surge Voltage) Code	Rated Capa- cance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
450 (500) 2W	2210	116	58	5.01	35X95	ECS2WDS22AM □□ 350095
	2270	114	57	5.32	32X115	ECS2WDS22GM □□ 320115
	2340	110	55	5.26	35X100	ECS2WDS23DM □□ 350100
	2380	110	55	5.53	32X120	ECS2WDS23HM □□ 320120
	2470	108	54	5.43	35X105	ECS2WDS24GM □□ 350105
	2590	104	52	5.66	35X110	ECS2WDS25JM □□ 350110
	2720	100	50	5.89	35X115	ECS2WDS27BM □□ 350115
	2850	96	48	6.13	35X120	ECS2WDS28EM □□ 350120
	320	610	305	1.24	30X30	ECS2QDS321M □□ 300030
	370	530	265	1.37	32X30	ECS2QDS371M □□ 320030
475 (525) 2Q	400	494	247	1.47	30X35	ECS2QDS401M □□ 300035
	440	452	226	1.55	35X30	ECS2QDS441M □□ 350030
	450	442	221	1.59	32X35	ECS2QDS451M □□ 320035
	480	418	209	1.69	30X40	ECS2QDS481M □□ 300040
	540	374	187	1.83	32X40	ECS2QDS541M □□ 320040
	550	368	184	1.82	35X35	ECS2QDS551M □□ 350035
	560	360	180	1.92	30X45	ECS2QDS561M □□ 300045
	630	322	161	2.08	32X45	ECS2QDS631M □□ 320045
	640	318	159	2.14	30X50	ECS2QDS641M □□ 300050
	650	312	156	2.09	35X40	ECS2QDS651M □□ 350040
475 (525) 2Q	720	286	143	2.35	30X55	ECS2QDS721M □□ 300055
		286	143	2.30	32X50	ECS2QDS721M □□ 320050
	760	274	137	2.34	35X45	ECS2QDS761M □□ 350045
	800	262	131	2.55	30X60	ECS2QDS801M □□ 300060
	810	258	129	2.53	32X55	ECS2QDS811M □□ 320055
	860	246	123	2.58	35X50	ECS2QDS861M □□ 350050
	870	244	122	2.74	30X65	ECS2QDS871M □□ 300065
	900	236	118	2.75	32X60	ECS2QDS901M □□ 320060
	950	226	113	2.94	30X70	ECS2QDS951M □□ 300070
	970	222	111	2.83	35X55	ECS2QDS971M □□ 350055
475 (525) 2Q	980	220	110	2.95	32X65	ECS2QDS981M □□ 320065
	1010	216	108	3.11	30X75	ECS2QDS10AM □□ 300075
	1050	208	104	3.14	32X70	ECS2QDS10EM □□ 320070
	1060	206	103	3.06	35X60	ECS2QDS10FM □□ 350060
	1090	202	101	3.31	30X80	ECS2QDS10JM □□ 300080
	1140	194	97	3.35	32X75	ECS2QDS11DM □□ 320075
	1160	192	96	3.28	35X65	ECS2QDS11FM □□ 350065
	1170	190	95	3.51	30X85	ECS2QDS11GM □□ 300085
	1230	184	92	3.54	32X80	ECS2QDS12CM □□ 320080
	1240	182	91	3.68	30X90	ECS2QDS12DM □□ 300090
475 (525) 2Q	1260	180	90	3.50	35X70	ECS2QDS12FM □□ 350070
	1310	174	87	3.74	32X85	ECS2QDS13AM □□ 320085
	1320	174	87	3.86	30X95	ECS2QDS13BM □□ 300095
	1370	168	84	3.74	35X75	ECS2QDS13GM □□ 350075
	1400	166	83	4.05	30X100	ECS2QDS142M □□ 300100
		166	83	3.93	32X90	ECS2QDS142M □□ 320090
	1470	160	80	4.22	30X105	ECS2QDS14GM □□ 300105
		160	80	3.94	35X80	ECS2QDS14GM □□ 350080
	1490	158	79	4.14	32X95	ECS2QDS14JM □□ 320095
	1550	154	77	4.40	30X110	ECS2QDS15EM □□ 300110
475 (525) 2Q	1570	152	76	4.32	32X100	ECS2QDS15GM □□ 320100
	1580	152	76	4.16	35X85	ECS2QDS15HM □□ 350085
	1630	148	74	4.58	30X115	ECS2QDS16CM □□ 300115
	1660	146	73	4.51	32X105	ECS2QDS16FM □□ 320105
	1680	144	72	4.38	35X90	ECS2QDS16HM □□ 350090
	1710	142	71	4.77	30X120	ECS2QDS17AM □□ 300120
	1750	140	70	4.70	32X110	ECS2QDS17EM □□ 320110
	1780	138	69	4.59	35X95	ECS2QDS17HM □□ 350095
	1830	136	68	4.87	32X115	ECS2QDS18CM □□ 320115
	1890	132	66	4.80	35X100	ECS2QDS18JM □□ 350100
475 (525) 2Q	1920	130	65	5.08	32X120	ECS2QDS198M □□ 320120
	1990	128	64	4.99	35X105	ECS2QDS19JM □□ 350105
	2100	122	61	5.22	35X110	ECS2QDS212M □□ 350110
	2200	118	59	5.42	35X115	ECS2QDS222M □□ 350115
	2300	114	57	5.63	35X120	ECS2QDS232M □□ 350120

Customer products are available on request.