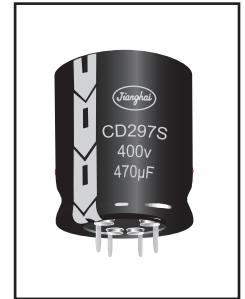
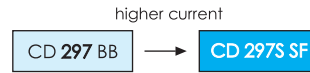


# CD 297S SF SERIES



5000h at 105°C

- Long Life, high reliability
- High Ripple Current
- Solar inverter
- RoHS
- Excellent airtightness, adoption of special sealing process
- Longer useful life

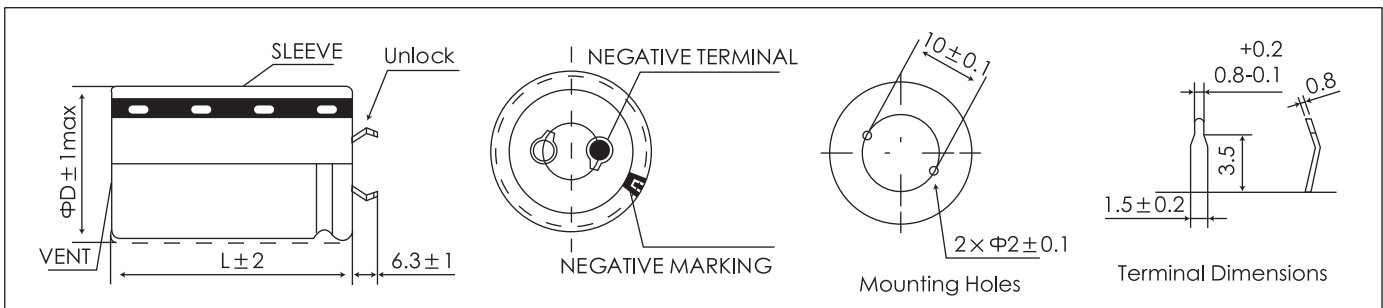


Items	Characteristics			
Operating Temperature Range (°C)	-40 ~ +105	-25 ~ +105		
Voltage Range (V)	160 ~ 420	450 ~ 550		
Capacitance Range (µF)	100 ~ 3300			
Capacitance Tolerance (20°C, 120Hz)	± 20%			
Leakage Current (µA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 1.5mA, whichever is smaller. C: Nominal Capacitance (µF) V: Rated Voltage (V)			
Dissipation Factor (20°C, 120Hz)	WV (V)	160~420	450~500	550
	Tan δ	0.15	0.20	0.25
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	160~250	315~420	450~550
	Z <sub>-25°C</sub> / Z <sub>+20°C</sub>	4	7	10
	Z <sub>-40°C</sub> / Z <sub>+20°C</sub>	8	12	-

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	10000h	>250000h	5000h	5000h	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 <sub>R</sub> I <sub>R</sub> 105°C	U <sub>R</sub> 1.2 × 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

Frequency(Hz)	50/60	120	300	1K	10K	≥50K
Factor 160~250V	0.80	1.00	1.17	1.32	1.45	1.50
Factor 315~550V	0.80	1.00	1.16	1.30	1.41	1.43

## Temperature Coefficient

Temperature(°C)	+40	+55	+70	+85	+105
Factor	3.0	2.8	2.5	2.0	1.0

## Ratings for CD 297S SF Series

U <sub>r</sub> (Surge Voltage) Code	Rated Capacitance	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)	-	
<b>160 (200) 2C</b>	470	423	254	1.5	22×25	ECS2CSF471M□□220025	
	560	355	213	1.7	22×30	ECS2CSF561M□□220030	
	680	293	176	1.9	22×30	ECS2CSF681M□□220030	
		293	176	1.8	25×25	ECS2CSF681M□□250025	
	820	243	146	2.1	22×35	ECS2CSF821M□□220035	
		243	146	2.1	25×30	ECS2CSF821M□□250030	
	1000	199	119	2.4	22×40	ECS2CSF102M□□220040	
		199	119	2.4	25×35	ECS2CSF102M□□250035	
		199	119	2.5	30×25	ECS2CSF102M□□300025	
	1200	166	100	2.8	25×40	ECS2CSF122M□□250040	
		166	100	2.8	30×30	ECS2CSF122M□□300030	
		166	100	2.8	35×25	ECS2CSF122M□□350025	
	1500	133	80	3.1	25×45	ECS2CSF152M□□250045	
		133	80	3.1	25×50	ECS2CSF152M□□250050	
		133	80	3.2	30×35	ECS2CSF152M□□300035	
	1800	111	66	3.6	25×50	ECS2CSF182M□□250050	
		111	66	3.6	30×40	ECS2CSF182M□□300040	
		111	66	3.5	35×30	ECS2CSF182M□□350030	
	2200	90	54	4.1	30×45	ECS2CSF222M□□300045	
		90	54	4.1	30×50	ECS2CSF222M□□300050	
		90	54	4.0	35×35	ECS2CSF222M□□350035	
		90	54	4.0	35×50	ECS2CSF222M□□350050	
	2700	74	44	4.6	35×40	ECS2CSF272M□□350040	
		74	44	4.8	35×45	ECS2CSF272M□□350045	
	3300	60	36	5.4	35×50	ECS2CSF332M□□350050	
	<b>200 (250) 2D</b>	390	510	306	1.3	22×25	ECS2DSF391M□□220025
		470	423	254	1.5	22×30	ECS2DSF471M□□220030
		560	355	213	1.7	22×35	ECS2DSF561M□□220035
			355	213	1.6	25×25	ECS2DSF561M□□250025
		680	293	176	1.9	22×40	ECS2DSF681M□□220040
			293	176	1.9	25×30	ECS2DSF681M□□250030
			293	176	1.9	30×25	ECS2DSF681M□□300025
		820	243	146	2.2	22×45	ECS2DSF821M□□220045
			243	146	2.2	25×35	ECS2DSF821M□□250035
		1000	199	119	2.5	25×40	ECS2DSF102M□□250040
			199	119	2.5	30×30	ECS2DSF102M□□300030
		199	119	2.7	35×25	ECS2DSF102M□□350025	
		199	119	2.7	35×30	ECS2DSF102M□□350030	
1200		166	100	2.7	25×45	ECS2DSF122M□□250045	
		166	100	2.8	30×35	ECS2DSF122M□□300035	
		166	100	2.8	30×50	ECS2DSF122M□□300050	
		166	100	3.0	35×30	ECS2DSF122M□□350030	
1500		133	80	3.3	30×40	ECS2DSF152M□□300040	
		133	80	3.3	30×45	ECS2DSF152M□□300045	
		133	80	3.4	35×35	ECS2DSF152M□□350035	
1800		111	66	3.7	30×50	ECS2DSF182M□□300050	
		111	66	3.8	35×40	ECS2DSF182M□□350040	
		111	66	3.8	35×45	ECS2DSF182M□□350045	
2200		90	54	4.3	35×45	ECS2DSF222M□□350045	
		90	54	4.3	35×50	ECS2DSF222M□□350050	
2700		74	44	4.9	35×50	ECS2DSF272M□□350050	
<b>250 (300) 2E</b>		270	737	442	1.1	22×25	ECS2ESF271M□□220025
		330	603	362	1.3	22×30	ECS2ESF331M□□220030
		390	510	306	1.4	22×35	ECS2ESF391M□□220035
			510	306	1.4	25×25	ECS2ESF391M□□250025
		470	423	254	1.6	22×40	ECS2ESF471M□□220040
			423	254	1.6	25×30	ECS2ESF471M□□250030
		560	355	213	1.8	22×45	ECS2ESF561M□□220045
			355	213	1.8	25×35	ECS2ESF561M□□250035
			355	213	1.8	30×25	ECS2ESF561M□□300025
		680	293	176	2.0	25×40	ECS2ESF681M□□250040
		293	176	2.1	30×30	ECS2ESF681M□□300030	
		293	176	2.2	35×25	ECS2ESF681M□□350025	
	820	243	146	2.3	25×45	ECS2ESF821M□□250045	
		243	146	2.4	30×35	ECS2ESF821M□□300035	
		243	146	2.5	35×30	ECS2ESF821M□□350030	
	1000	199	119	2.7	30×40	ECS2ESF102M□□300040	
		166	100	3.0	30×45	ECS2ESF122M□□300045	
	1200	166	100	3.0	35×35	ECS2ESF122M□□350035	
		166	100	3.2	35×40	ECS2ESF122M□□350040	
	1500	133	80	3.6	35×45	ECS2ESF152M□□350045	
	1800	111	66	4.0	35×50	ECS2ESF182M□□350050	

U <sub>r</sub> (Surge Voltage) Code	Rated Capacitance	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)	-	
<b>315 (365) 2F</b>	180	1106	663	1.0	22×25	ECS2FSF181M□□220025	
	220	905	543	1.1	22×30	ECS2FSF221M□□220030	
	270	737	442	1.2	22×35	ECS2FSF271M□□220035	
		737	442	1.2	25×30	ECS2FSF271M□□250030	
	330	603	362	1.4	22×40	ECS2FSF331M□□220040	
	390	510	306	1.6	22×45	ECS2FSF391M□□220045	
		510	306	1.6	22×50	ECS2FSF391M□□220050	
		510	306	1.6	25×35	ECS2FSF391M□□250035	
	470	423	254	1.8	25×40	ECS2FSF471M□□250040	
		423	254	1.8	30×30	ECS2FSF471M□□300030	
		423	254	1.8	35×25	ECS2FSF471M□□350025	
	560	355	213	2.0	25×50	ECS2FSF561M□□250050	
		355	213	1.9	30×35	ECS2FSF561M□□300035	
		355	213	2.0	35×30	ECS2FSF561M□□350030	
	680	293	176	2.2	30×40	ECS2FSF681M□□300040	
		293	176	2.3	30×45	ECS2FSF681M□□300045	
		293	176	2.2	35×35	ECS2FSF681M□□350035	
	820	243	146	2.5	30×50	ECS2FSF821M□□350050	
		243	146	2.6	35×40	ECS2FSF821M□□350040	
	1000	199	119	2.9	35×45	ECS2FSF102M□□350045	
		166	100	3.3	35×50	ECS2FSF122M□□350050	
	1200	166	100	3.3	35×55	ECS2FSF122M□□350055	
	1500	133	80	3.6	35×60	ECS2FSF152M□□350060	
	1800	111	66	4.0	35×70	ECS2FSF182M□□350070	
	<b>350 (400) 2V</b>	120	1659	995	0.7	22×25	ECS2VSF121M□□220025
		150	1327	796	0.8	22×30	ECS2VSF151M□□220030
		180	1106	663	0.9	22×35	ECS2VSF181M□□250035
			1106	663	0.9	25×25	ECS2VSF181M□□250025
		220	905	543	1.0	22×40	ECS2VSF221M□□220040
			905	543	1.0	25×30	ECS2VSF221M□□250030
			905	543	1.0	30×25	ECS2VSF221M□□300025
		270	737	442	1.3	22×45	ECS2VSF271M□□220045
			737	442	1.3	22×50	ECS2VSF271M□□220050
			737	442	1.3	25×35	ECS2VSF271M□□250035
			737	442	1.3	30×30	ECS2VSF271M□□300030
		330	603	362	1.4	22×50	ECS2VSF331M□□220050
		603	362	1.4	25×40	ECS2VSF331M□□250040	
		603	362	1.4	30×30	ECS2VSF331M□□300030	
390		510	306	1.6	25×40	ECS2VSF391M□□250040	
		510	306	1.6	25×45	ECS2VSF391M□□250045	
		510	306	1.6	30×35	ECS2VSF391M□□300035	
470		423	254	1.8	25×45	ECS2VSF471M□□250045	
		423	254	1.8	35×35	ECS2VSF471M□□350035	
560		355	213	2.0	30×45	ECS2VSF561M□□300045	
		355	213	2.0	35×35	ECS2VSF561M□□350035	
680		293	176	2.4	30×50	ECS2VSF681M□□300050	
		293	176	2.4	35×40	ECS2VSF681M□□350040	
820		243	146	2.6	35×45	ECS2VSF821M□□350045	
		243	146	2.6	35×50	ECS2VSF821M□□350050	
1000		199	119	2.8	35×50	ECS2VSF102M□□350050	
<b>400 (450) 2G</b>		150	1327	708	0.9	22×30	ECS2GSF151M□□220030
			1327	708	0.9	25×25	ECS2GSF151M□□250025
		180	1106	590	1.0	22×35	ECS2GSF181M□□220035
			1106	590	1.0	25×25	ECS2GSF181M□□250025
		220	905	483	1.1	22×40	ECS2GSF221M□□220040
			905	483	1.1	25×30	ECS2GSF221M□□250030
			905	483	1.2	30×25	ECS2GSF221M□□300025
		270	737	393	1.3	22×50	ECS2GSF271M□□220050
			737	393	1.3	25×35	ECS2GSF271M□□250035
			737	393	1.3	30×30	ECS2GSF271M□□300030
	330	603	322	1.5	25×40	ECS2GSF331M□□250040	
		603	322	1.4	30×30	ECS2GSF331M□□300030	
		603	322	1.5	35×25	ECS2GSF331M□□350025	
	390	510	272	1.6	25×45	ECS2GSF391M□□250045	
		510	357	1.6	30×35	ECS2GSF391M□□300035	
		510	272	1.7	35×30	ECS2GSF391M□□350030	
	470	423	226	1.8	30×45	ECS2GSF471M□□300045	
		423	226	1.9	35×35	ECS2GSF471M□□350035	
	560	355	190	2.1	30×50	ECS2GSF561M□□300050	
		355	190	2.1	35×40	ECS2GSF561M□□350040	
	680	293	156	2.4	35×45	ECS2GSF681M□□350045	
	820	243	170	2.7	35×50	ECS2GSF821M□□350050	
	1000	199	106	3.2	35×60	ECS2GSF102M□□350060	
	1200	166	88	3.7	35×70	ECS2GSF122M□□350070	

# CD 297S SF SERIES



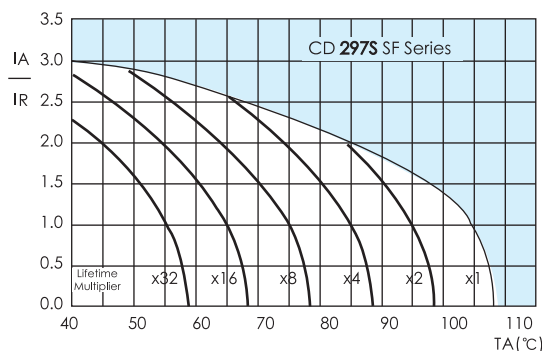
## Ratings for CD 297S SF Series

U <sub>r</sub> (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)	-
420 (470) 2X	100	1990	1128	0.7	22×25	ECS2XSF101M□□220025
		1659	940	0.8	22×30	ECS2XSF121M□□220030
	120	1659	940	0.8	25×25	ECS2XSF121M□□250025
		1327	752	0.9	22×35	ECS2XSF151M□□220035
	150	1106	627	1.0	22×40	ECS2XSF181M□□220040
		1106	627	1.0	25×30	ECS2XSF181M□□250030
		1106	627	1.1	30×25	ECS2XSF181M□□300025
	180	905	513	1.2	22×45	ECS2XSF221M□□220045
		905	513	1.2	22×50	ECS2XSF221M□□220050
		905	513	1.2	25×35	ECS2XSF221M□□250035
		905	513	1.2	30×30	ECS2XSF221M□□300030
	220	737	418	1.3	25×40	ECS2XSF271M□□250040
		737	418	1.3	30×30	ECS2XSF271M□□300030
		737	418	1.4	35×25	ECS2XSF271M□□350025
	270	603	342	1.5	25×50	ECS2XSF331M□□250050
		603	342	1.5	30×35	ECS2XSF331M□□300035
		603	342	1.6	35×30	ECS2XSF331M□□350030
	330	510	289	1.7	30×40	ECS2XSF391M□□300040
		510	289	1.7	35×30	ECS2XSF391M□□350030
		510	289	1.7	35×35	ECS2XSF391M□□350035
	390	423	240	1.9	30×50	ECS2XSF471M□□300050
		423	240	2.0	35×40	ECS2XSF471M□□350040
		560	355	2.0	35×40	ECS2XSF561M□□350040
	470	680	293	1.66	35×50	ECS2XSF681M□□350050
820		243	1.38	3.0	35×55	ECS2XSF821M□□350055
1000		199	1.13	3.4	35×65	ECS2XSF102M□□350065
450 (500) 2W	100	166	94	3.8	35×75	ECS2XSF122M□□350075
		2654	1062	0.7	22×30	ECS2WSF121M□□220030
	120	2212	885	0.8	22×30	ECS2WSF121M□□220030
		2212	885	0.8	22×35	ECS2WSF121M□□220035
		2212	885	0.8	25×25	ECS2WSF121M□□250025
	150	1769	708	0.9	22×40	ECS2WSF151M□□220040
		1769	708	0.9	25×30	ECS2WSF151M□□250030
	180	1474	590	1.1	22×45	ECS2WSF181M□□220045
		1474	590	1.1	25×35	ECS2WSF181M□□250035
		1474	590	1.1	30×25	ECS2WSF181M□□300025
	220	1206	483	1.2	22×50	ECS2WSF221M□□220050
		1206	483	1.2	25×40	ECS2WSF221M□□250040
		1206	483	1.2	30×30	ECS2WSF221M□□300030
	270	983	393	1.3	25×45	ECS2WSF271M□□250045
		983	393	1.3	30×35	ECS2WSF271M□□300035
		983	393	1.4	35×30	ECS2WSF1271M□□350030
	330	804	322	1.5	30×40	ECS2WSF331M□□300040
		680	272	1.7	30×45	ECS2WSF391M□□300045
	390	680	272	1.7	35×35	ECS2WSF391M□□350035
		680	272	1.7	35×40	ECS2WSF391M□□350040
	470	565	226	2.0	35×40	ECS2WSF471M□□350040
		565	226	2.0	35×45	ECS2WSF471M□□350045
		565	226	2.0	35×50	ECS2WSF471M□□350050
	560	474	190	2.2	35×50	ECS2WSF561M□□350050
390		156	2.6	35×55	ECS2WSF681M□□350055	
680	390	156	2.6	35×60	ECS2WSF681M□□350060	
	820	324	1.29	3.0	35×65	ECS2WSF821M□□350065
1000	265	106	3.4	35×75	ECS2WSF102M□□350075	
	265	106	3.4	40×65	ECS2WSF102M□□400065	
1200	221	88	3.7	40×75	ECS2WSF122M□□400075	

U <sub>r</sub> (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)	-	
500 (550) 2H	100	2654	1062	0.8	25×30	ECS2HSF101M□□250030	
		2212	885	0.9	25×35	ECS2HSF121M□□250035	
	120	2212	885	0.9	30×30	ECS2HSF121M□□300030	
		1769	708	1.0	30×30	ECS2HSF151M□□300030	
	150	1474	590	1.2	30×35	ECS2HSF181M□□300035	
		1206	483	1.3	25×50	ECS2HSF221M□□250050	
		1206	483	1.3	35×35	ECS2HSF221M□□350035	
	180	983	393	1.5	30×50	ECS2HSF271M□□300050	
		983	393	1.5	35×40	ECS2HSF271M□□350040	
		804	322	1.6	35×45	ECS2HSF331M□□350035	
	220	680	272	1.8	35×50	ECS2HSF391M□□350050	
		565	226	2.0	35×55	ECS2HSF471M□□350055	
		565	226	2.0	35×60	ECS2HSF471M□□350060	
	270	474	190	2.2	35×65	ECS2HSF561M□□350065	
		474	190	2.2	40×50	ECS2HSF561M□□400050	
		390	156	2.4	35×70	ECS2HSF681M□□350070	
	330	390	156	2.4	40×60	ECS2HSF681M□□400060	
		820	324	1.29	2.6	40×70	ECS2HSF821M□□400070
		1000	265	1.06	2.8	45×70	ECS2HSF102M□□450070
	390	1200	221	88	3.2	45×80	ECS2HSF122M□□450080
		270	1229	590	1.3	35×50	ECS2YSF271M□□350050
		330	1005	483	1.4	35×60	ECS2YSF331M□□350060
	470	390	851	408	1.6	35×65	ECS2YSF391M□□350065
		706	339	1.8	35×70	ECS2YSF471M□□350070	
706		339	1.8	40×65	ECS2YSF471M□□400065		
560	592	284	2.0	35×80	ECS2YSF561M□□350080		
	592	284	2.0	40×70	ECS2YSF561M□□400070		
	680	488	234	2.3	40×80	ECS2YSF681M□□400080	
		488	234	2.3	45×70	ECS2YSF681M□□450070	

Customer products are available on request.

## Lifetime Diagram



IA = actual ripple current at 120Hz, IR = rated ripple current at 120Hz, 105°C  
Multiplier of Useful Life as a function of ambient temperature and ripple current load