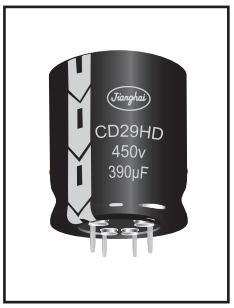
CD 29HD QF SERIES

3000h at 105℃

- Long Life at High Temperature
- Outstanding ripple current
- Special structure design , extremely improved performance at high frequencies

CD 29HD QF
↑ highest ripple
CD 29H QH



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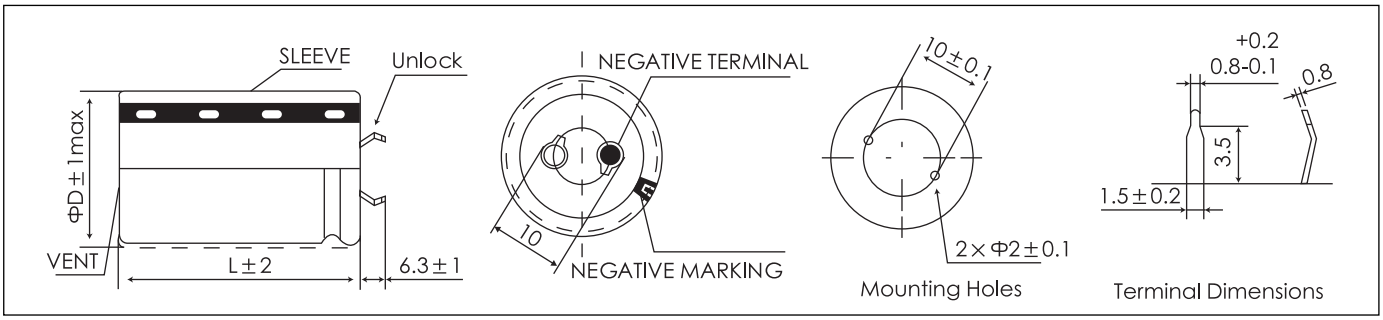
Items	Characteristics
Operating Temperature Range (℃)	-40 ~ +105
Voltage Range (V)	200 ~ 450
Capacitance Range (μF)	220 ~ 3900
Capacitance Tolerance (20℃, 120Hz)	± 20%
Leakage Current (μA)	After 5 minutes at 20℃ application of rated voltage, leakage current is not more than 0.01CV or 1.5mA, whichever is smaller. C: Nominal Capacitance (μF) V: Rated Voltage (V)
Dissipation Factor (20℃, 120Hz)	Rated Voltage (V): 200~400 → Tan δ (max): 0.15; 450 → 0.2
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V): 200~400 / 450; $Z_{-25℃}/Z_{+20℃}$: 3 / 7; $Z_{-40℃}/Z_{+20℃}$: 7 / 12

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	8000h	>200000h	3000h	4000h	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℃	U_R 1.4 x I_R 40℃	U_R I_R 105℃	U_R I_R = 0 105℃	U_R = 0 I_R = 0 105℃ After test: U_R to be applied for 30min >24h before measurement

Dimensions

mm



Temperature Coefficient

Temperature(℃)	+40	+55	+70	+85	+105
Coefficient	3.0	2.8	2.5	2.0	1.0

Frequency Coefficient

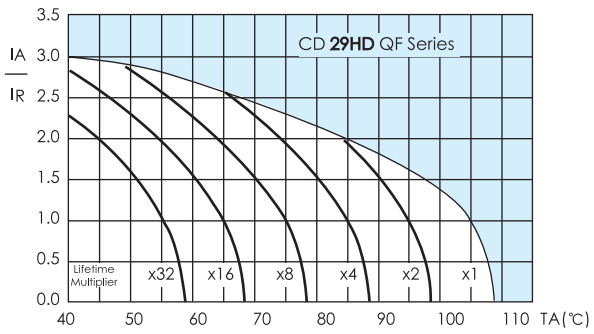
Frequency	50/60Hz	120Hz	300Hz	1kHz	10kHz	⩾50kHz
200V~350V	0.80	1.00	1.35	1.50	1.59	1.60
400V	0.80	1.00	1.35	1.60	1.72	1.72
450V	0.80	1.00	1.32	1.50	1.62	1.63

Ratings for CD **29HD** QF Series

U_R (Surge Voltage) Code	Rated Capacitance	Max ESR 20℃, 120Hz	Typ ESR 20℃, 120Hz	Rated Ripple Current 105℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
200 (250) 2D	1000	199	80	3.20	30×35	ECS2DQF102M□□300035
	1200	166	66	3.70	30×40	ECS2DQF122M□□300040
	1500	133	53	4.36	30×50	ECS2DQF152M□□300050
		133	53	4.32	35×40	ECS2DQF152M□□350040
	1800	111	48	4.58	30×55	ECS2DQF182M□□300055
		111	48	4.67	35×45	ECS2DQF182M□□350045
		111	48	4.35	40×35	ECS2DQF182M□□400035
	2200	90	42	5.46	35×50	ECS2DQF222M□□350050
		90	42	5.38	40×40	ECS2DQF222M□□400040
	2700	74	34	5.95	35×55	ECS2DQF272M□□350055
		74	34	6.05	40×50	ECS2DQF272M□□400050
	3300	60	30	6.41	35×65	ECS2DQF332M□□350065
		60	30	6.52	40×55	ECS2DQF332M□□400055
	3900	51	26	7.15	40×65	ECS2DQF332M□□400065
250 (300) 2E	680	293	117	2.65	30×35	ECS2EQF681M□□300035
	820	243	97	3.00	30×40	ECS2EQF821M□□300040
		243	97	3.05	35×35	ECS2EQF821M□□350035
	1000	199	80	3.56	30×50	ECS2EQF102M□□300050
		199	80	3.52	35×40	ECS2EQF102M□□350040
	1200	166	66	3.93	30×55	ECS2EQF122M□□300055
		166	66	3.87	35×40	ECS2EQF122M□□350040
	1500	133	62	4.30	30×60	ECS2EQF152M□□300060
		133	62	4.38	35×50	ECS2EQF152M□□350050
	1800	111	55	4.70	35×55	ECS2EQF182M□□350055
		111	55	4.85	40×45	ECS2EQF182M□□400045
	2200	90	45	5.15	35×65	ECS2EQF222M□□350065
		90	45	5.35	40×50	ECS2EQF222M□□400050
	2700	74	37	5.92	40×60	ECS2EQF272M□□400060
350 (400) 2V	330	603	241	2.12	30×35	ECS2VQF331M□□300035
	390	510	204	2.36	30×40	ECS2VQF391M□□300040
	470	423	169	2.60	30×45	ECS2VQF471M□□300045
		423	169	2.53	35×35	ECS2VQF471M□□300035
	560	355	142	2.86	30×50	ECS2VQF561M□□300050
		355	142	2.83	35×40	ECS2VQF561M□□350040
	680	293	117	3.06	30×55	ECS2VQF681M□□300055
		293	117	3.10	35×45	ECS2VQF681M□□350045
		293	117	3.20	40×40	ECS2VQF681M□□400040
	820	243	97	3.40	30×65	ECS2VQF821M□□300065
		243	97	3.23	35×50	ECS2VQF821M□□350050
		243	97	3.46	40×45	ECS2VQF821M□□400045
	1000	199	80	3.82	35×60	ECS2VQF102M□□350060
		199	80	3.80	40×50	ECS2VQF102M□□400050
	1200	166	66	4.25	40×55	ECS2VQF122M□□400055
	1500	133	53	4.72	40×65	ECS2VQF152M□□400065
400 (450) 2G	270	737	270	1.62	30×35	ECS2GQF271M□□300035
	330	603	221	2.10	30×35	ECS2GQF331M□□300035
	390	510	187	2.20	30×40	ECS2GQF391M□□300040
		510	187	2.31	35×35	ECS2GQF391M□□350035
	470	423	155	2.70	30×50	ECS2GQF471M□□300050
		423	155	2.60	35×40	ECS2GQF471M□□350040
		423	155	2.75	40×35	ECS2GQF471M□□400035
	560	355	130	2.90	30×55	ECS2GQF561M□□300055
		355	130	2.95	35×45	ECS2GQF561M□□350045
		355	130	3.01	40×40	ECS2GQF561M□□400040
	680	293	107	3.25	35×50	ECS2GQF681M□□350050
		293	107	3.45	40×45	ECS2GQF681M□□400045
	820	243	89	3.81	35×55	ECS2GQF821M□□350055
		243	89	3.92	40×50	ECS2GQF821M□□400050
	1000	199	73	4.30	35×65	ECS2GQF102M□□350065
		199	73	4.35	40×55	ECS2GQF102M□□400055
	1200	166	61	4.80	40×65	ECS2GQF122M□□400065
450 (500) 2W	220	1206	362	1.67	30×35	ECS2WQF221M□□300035
	270	983	295	1.88	30×40	ECS2WQF271M□□300040
	330	804	241	2.18	30×45	ECS2WQF331M□□300045
		804	241	2.09	35×35	ECS2WQF331M□□350035
	390	680	204	2.45	30×50	ECS2WQF391M□□300050
		680	204	2.43	35×40	ECS2WQF391M□□350040
	470	565	169	2.79	30×55	ECS2WQF471M□□300055
		565	169	2.83	35×45	ECS2WQF471M□□350045
		565	169	2.70	40×35	ECS2WQF471M□□400035
	560	474	142	3.15	30×60	ECS2WQF561M□□300060
		474	142	3.20	35×50	ECS2WQF561M□□350050
		474	142	3.00	40×40	ECS2WQF561M□□400040
	680	390	117	3.53	35×55	ECS2WQF681M□□350055
		390	117	3.40	40×45	ECS2WQF681M□□400045
	820	324	97	3.85	35×65	ECS2WQF821M□□350065
		324	97	3.88	40×55	ECS2WQF821M□□400055
	1000	159	80	4.26	40×65	ECS2WQF102M□□400065

Customer products are available on request.

Lifetime Diagram



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

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