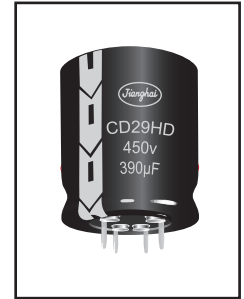
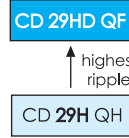


3000h at 105°C

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



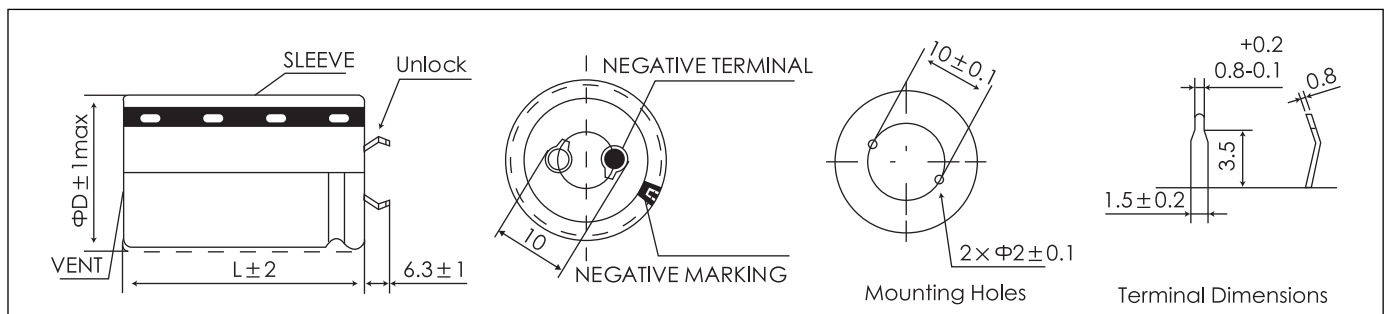
SNAP-IN/LUG

Items	Characteristics		
Operating Temperature Range (°C)	-40 ~ +105		
Voltage Range (V)	200 ~ 450		
Capacitance Range (µF)	220 ~ 3900		
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)	200~400	450
	Tan δ (max)	0.15	0.2
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	200~400	450
	Z _{-25°C} / Z _{+20°C}	3	7
	Z _{-40°C} / Z _{+20°C}	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°C	U _R 1.4 × I _R 40°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

Dimensions

mm



Temperature Coefficient

Temperature (°C)	+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

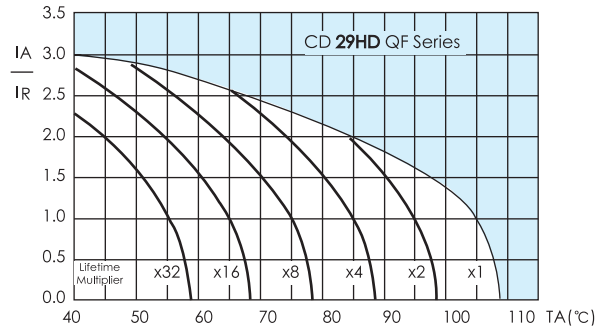
CD 29HD QF SERIES



Ratings for CD 29HD QF Series

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

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

Customer products are available on request.