

CD 29H QH SERIES



3000h at 105°C

- Long Useful Life
- Highest Ripple Current
- Industrial Power Supplies and Inverters

CD 29H QH

↑ highest current

CD 296 KC

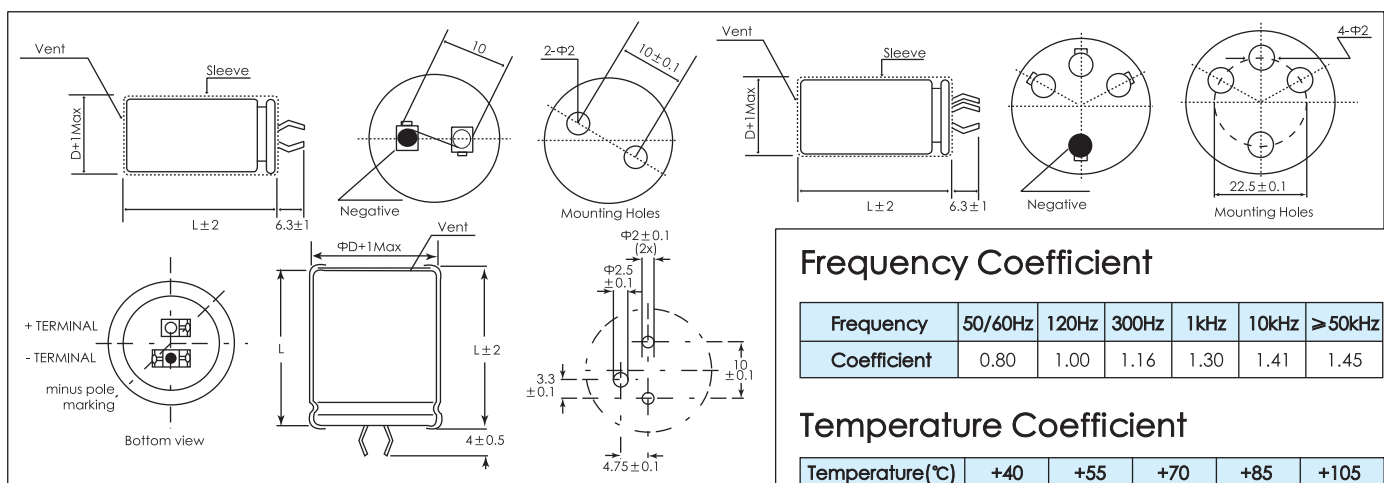


Items	Characteristics					
Operating Temperature Range (°C)	-40 ~ +105					
Voltage Range (V)	160 ~ 450					
Capacitance Range (µF)	56 ~ 2200					
Capacitance Tolerance (20°C, 120Hz)	± 20%					
Leakage Current (µA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 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	200	250	350	400~450
	Tan δ (max)	0.15				0.12
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	160 ~ 450				
	Z _{-40°C} / Z _{+20°C}	4				

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	5000h	>100000h	3000h	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 x I _R 50°C	U _R I _R 105°C	U _R I _R = 0 105°C	After test: U _R to be applied for 30min I _R = 0 >24h before measurement

Dimensions

mm



Frequency Coefficient

Frequency	50/60Hz	120Hz	300Hz	1kHz	10kHz	≥50kHz
Coefficient	0.80	1.00	1.16	1.30	1.41	1.45

Temperature Coefficient

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

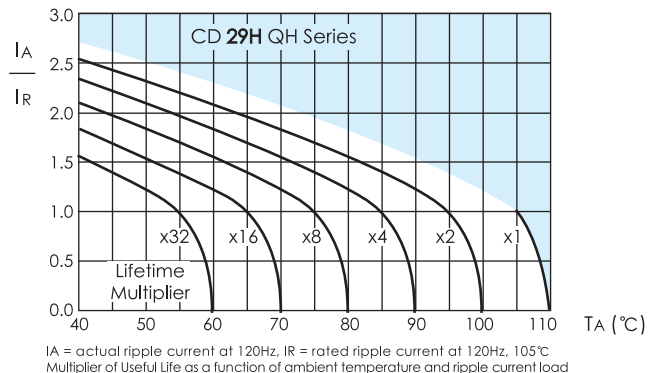
Ratings for CD 29H QH Series

U _r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N	
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-	
160 (200) 2C	330	603	355	1.42	22 x 25	ECS2CQH331M□□220025	
	390	510	300	1.45	25 x 25	ECS2CQH391M□□250025	
	470	424	245	1.63	22 x 35	ECS2CQH471M□□220035	
	560	355	215	1.75	22 x 35	ECS2CQH561M□□220035	
		355	215	1.75	25 x 30	ECS2CQH561M□□250030	
		355	215	1.75	30 x 25	ECS2CQH561M□□300025	
	680	293	178	1.98	22 x 40	ECS2CQH681M□□220040	
		293	178	1.98	25 x 35	ECS2CQH681M□□250035	
		243	145	2.35	22 x 50	ECS2CQH821M□□220050	
	820	243	145	2.35	25 x 40	ECS2CQH821M□□250040	
		243	145	2.35	30 x 30	ECS2CQH821M□□300030	
		243	145	2.35	35 x 25	ECS2CQH821M□□350025	
		199	115	2.50	25 x 45	ECS2CQH102M□□250045	
	1000	199	115	2.50	30 x 35	ECS2CQH102M□□300035	
		199	115	2.50	35 x 30	ECS2CQH102M□□350030	
		166	95	2.87	25 x 50	ECS2CQH122M□□250050	
	1200	166	95	2.87	30 x 40	ECS2CQH122M□□300040	
		166	95	2.87	35 x 35	ECS2CQH122M□□350035	
		133	75	3.57	30 x 45	ECS2CQH152M□□300045	
	1500	133	75	3.60	35 x 40	ECS2CQH152M□□350040	
		111	75	4.15	35 x 45	ECS2CQH182M□□350045	
	2200	91	58	4.65	35 x 50	ECS2CQH222M□□350050	
	200 (250) 2D	220	905	550	1.1	22 x 25	ECS2DQH221M□□220025
		270	737	460	1.17	22 x 25	ECS2DQH271M□□220025
330		603	370	1.4	22 x 30	ECS2DQH331M□□220030	
		603	370	1.4	25 x 25	ECS2DQH331M□□250025	
390		510	310	1.45	22 x 30	ECS2DQH391M□□220030	
		424	260	1.55	22 x 35	ECS2DQH471M□□220035	
470		424	260	1.55	25 x 30	ECS2DQH471M□□250030	
		424	260	1.6	30 x 25	ECS2DQH471M□□300025	
		355	220	1.65	22 x 45	ECS2DQH561M□□220045	
560		355	220	1.65	25 x 35	ECS2DQH561M□□250035	
		293	180	1.68	22 x 50	ECS2DQH681M□□220050	
		293	180	1.92	25 x 40	ECS2DQH681M□□250040	
680		293	180	1.92	30 x 30	ECS2DQH681M□□300030	
		293	180	2.2	35 x 25	ECS2DQH681M□□350025	
		243	150	2.2	25 x 45	ECS2DQH821M□□250045	
820		243	150	2.2	30 x 35	ECS2DQH821M□□300035	
		243	150	2.4	35 x 30	ECS2DQH821M□□350030	
		199	120	2.4	30 x 40	ECS2DQH102M□□300040	
1000		199	120	2.4	35 x 35	ECS2DQH102M□□350035	
		166	100	2.75	30 x 45	ECS2DQH122M□□300045	
		166	100	2.75	35 x 40	ECS2DQH122M□□350040	
1500		133	80	3.45	35 x 40	ECS2DQH152M□□350040	
		180	111	68	4	35 x 45	ECS2DQH182M□□350045
2200		91	56	4.5	35 x 50	ECS2DQH222M□□350050	
250 (300) 2E	180	1106	620	1	22 x 25	ECS2EQH181M□□220025	
	220	905	570	1.2	22 x 30	ECS2EQH221M□□220030	
	270	905	570	1.2	25 x 25	ECS2EQH221M□□250025	
	330	737	470	1.25	22 x 35	ECS2EQH271M□□220035	
		603	380	1.3	22 x 40	ECS2EQH331M□□220040	
	390	603	380	1.35	25 x 30	ECS2EQH331M□□250030	
		603	380	1.35	30 x 25	ECS2EQH331M□□300025	
		510	325	1.4	22 x 45	ECS2EQH391M□□220045	
	470	510	325	1.45	25 x 35	ECS2EQH391M□□250035	
		424	268	1.65	22 x 50	ECS2EQH471M□□220050	
		424	268	1.65	30 x 30	ECS2EQH471M□□300030	
	560	424	268	1.65	35 x 25	ECS2EQH471M□□350025	
		355	225	1.85	25 x 45	ECS2EQH561M□□250045	
		355	225	1.85	30 x 35	ECS2EQH561M□□300035	
	680	355	225	1.85	35 x 30	ECS2EQH561M□□350030	
		293	185	2.2	25 x 50	ECS2EQH681M□□250050	
		293	185	2.2	30 x 40	ECS2EQH681M□□300040	
	820	243	153	2.5	30 x 45	ECS2EQH821M□□300045	
		243	153	2.5	30 x 50	ECS2EQH821M□□300050	
		199	125	2.9	30 x 50	ECS2EQH102M□□300050	
	1000	199	125	2.9	35 x 40	ECS2EQH102M□□350040	
		166	105	3.3	35 x 45	ECS2EQH122M□□350045	
		133	85	3.8	35 x 50	ECS2EQH152M□□350050	
	350 (400) 2V	68	2927	1280	0.7	22 x 25	ECS2VQH680M□□220025
100		1990	1060	0.87	22 x 30	ECS2VQH101M□□220030	
120		1990	1060	0.87	25 x 25	ECS2VQH101M□□250025	
		1659	880	0.9	22 x 35	ECS2VQH121M□□220035	
150		1327	700	0.98	22 x 40	ECS2VQH151M□□220040	
		1327	700	1.02	25 x 30	ECS2VQH151M□□250030	
		1327	700	1.02	30 x 25	ECS2VQH151M□□300025	
180		1106	580	1.11	22 x 45	ECS2VQH181M□□220045	
		1106	580	1.11	25 x 35	ECS2VQH181M□□250035	
		1106	580	1.12	30 x 30	ECS2VQH181M□□300030	
220		905	480	1.16	22 x 50	ECS2VQH221M□□220050	
		905	480	1.2	25 x 40	ECS2VQH221M□□250040	
		905	480	1.2	35 x 25	ECS2VQH221M□□350025	
270		737	390	1.26	25 x 50	ECS2VQH271M□□250050	
		737	390	1.31	30 x 35	ECS2VQH271M□□300035	
		737	390	1.26	35 x 30	ECS2VQH271M□□350030	
330		603	320	1.45	30 x 45	ECS2VQH331M□□300045	
		603	320	1.45	35 x 35	ECS2VQH331M□□350035	
		510	270	1.58	30 x 50	ECS2VQH391M□□300050	
390		510	270	1.58	35 x 40	ECS2VQH391M□□350040	
		470	424	2.28	35 x 45	ECS2VQH471M□□350045	
560		355	190	1.89	35 x 50	ECS2VQH561M□□350050	

U _r (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)	-
400 (450) 2G	68	2342	1260	0.48	22 x 25	ECS2GQH680M□□220025
	82	1942	1050	0.57	22 x 30	ECS2GQH820M□□220030
		1942	1050	0.56	25 x 25	ECS2GQH820M□□250025
	100	1592	860	0.65	22 x 35	ECS2GQH101M□□220035
		1592	860	0.65	25 x 25	ECS2GQH101M□□250025
	120	1327	718	0.71	22 x 35	ECS2GQH121M□□220035
		1327	718	0.71	25 x 30	ECS2GQH121M□□250030
		1327	718	0.71	30 x 25	ECS2GQH121M□□300025
	150	1062	575	0.85	22 x 40	ECS2GQH151M□□220040
		1062	575	0.85	25 x 35	ECS2GQH151M□□250035
		1062	575	0.85	30 x 25	ECS2GQH151M□□300025
	180	885	479	1	22 x 50	ECS2GQH181M□□220050
		885	479	1	25 x 40	ECS2GQH181M□□250040
		885	479	1	30 x 30	ECS2GQH181M□□300030
	220	885	479	1	35 x 25	ECS2GQH181M□□350025
		724	292	1.2	25 x 45	ECS2GQH221M□□250045
		724	292	1.2	30 x 35	ECS2GQH221M□□300035
		724	292	1.2	35 x 30	ECS2GQH221M□□350030
	270	590	319	1.35	25 x 50	ECS2GQH271M□□250050
		590	319	1.35	30 x 40	ECS2GQH271M□□300040
		590	319	1.35	35 x 30	ECS2GQH271M□□350030
	330	483	260	1.6	30 x 45	ECS2GQH331M□□300045
		483	260	1.6	35 x 35	ECS2GQH331M□□350035
	390	408	220	1.8	30 x 50	ECS2GQH391M□□300050
408		220	1.8	35 x 40	ECS2GQH391M□□350040	
470	339	183	2.1	35 x 45	ECS2GQH471M□□350045	
	284	154	2.3	35 x 50	ECS2GQH561M□□350050	
560	56	2844	1360	0.5	22 x 25	ECS2WQH560M□□220025
	68	2342	1170	0.6	22 x 30	ECS2WQH680M□□220030
82	1942	970	0.65	22 x 35	ECS2WQH820M□□220035	
	1592	790	0.72	22 x 35	ECS2WQH101M□□220035	
100	1592	790	0.72	25 x 30	ECS2WQH101M□□250030	
	1592	790	0.72	30 x 25	ECS2WQH101M□□300025	
	1327	660	0.8	22 x 45	ECS2WQH121M□□220045	
120	1327	660	0.8	25 x 35	ECS2WQH121M□□250035	
	1327	660	0.8	25 x 35	ECS2WQH121M□□300030	
	1062	530	0.95	22 x 50	ECS2WQH151M□□220050	
150	1062	530	0.95	25 x 40	ECS2WQH151M□□250040	
	1062	530	0.95	30 x 30	ECS2WQH151M□□300030	
	1062	530	0.95	35 x 25	ECS2WQH151M□□350025	
180	885	440	1.05	25 x 45	ECS2WQH181M□□250045	
	885	440	1.05	30 x 35	ECS2WQH181M□□300035	
	724	360	1.3	25 x 50	ECS2WQH221M□□250050	
220	724	360	1.3	30 x 40	ECS2WQH221M□□300040	
	724	360	1.3	35 x 30	ECS2WQH221M□□350030	
	590	295	1.5	30 x 45	ECS2WQH271M□□300045	
270	590	295	1.5	35 x 35	ECS2WQH271M□□350035	
	590	295	1.5	35 x 35	ECS2WQH271M□□300050	
	483	240	1.9	30 x 50	ECS2WQH331M□□300050	
390	483	240	1.9	35 x 40	ECS2WQH331M□□350040	
	408	205	1.9	35 x 45	ECS2WQH391M□□350045	
470	339	170	2.2	35 x 50	ECS2WQH471M□□350050	

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