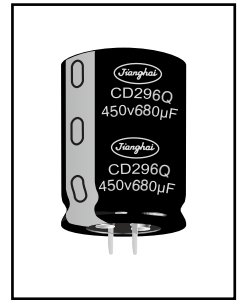


3000h at 105°C

- Automotive application
- High reliability
- Load Life of 3000h at 105°C
- Qualification based on AEC-Q200 Rev E standard

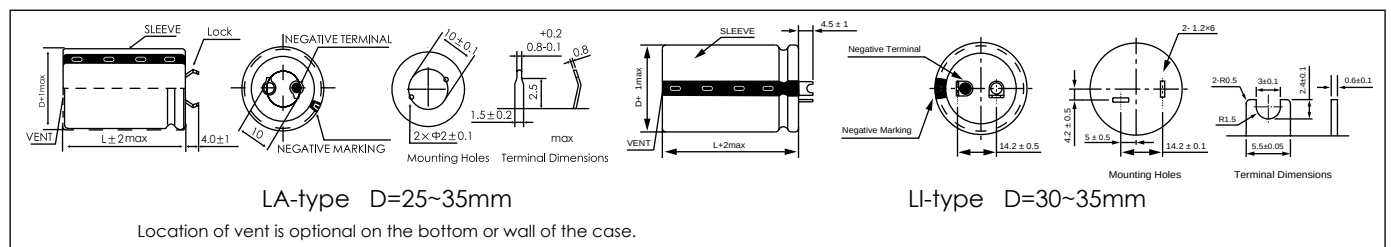


Items	Characteristics	
Operating Temperature Range (°C)	-40 ~ +105	
Voltage range (V)	450 ~ 500	
Capacitance Range (μF)	180 ~ 820	
Capacitance Tolerance (20°C , 120Hz)	± 20%	
Leakage Current (μA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 1.5mA, whichever is smaller. C: Nominal Capacitance (μF) V: Rated Voltage (V)	
Dissipation Factor (20°C , 120Hz)	≤ 0.20	
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	450~500
	Z _{-25°C} / Z _{+20°C}	4
	Z _{-40°C} / Z _{+20°C}	15
Vibration	Conditions: Frequency range: 10~2000Hz Acceleration: 5g max Sweep rate: 10 to 2000Hz to 10Hz 20min each cycle Duration: 4 hours in each of X Y Z directions (total of 12 hours) Fixation: Capacitor body shall be clamped rigidly to the work surface	
	After test, following specifications shall be satisfied: Leakage current: not more than specified value Capacitance change: within ±5% of initial value Dissipation factor: not more than specified value	

	Useful Life		Load Life	Endurance Test	Shelf Life
Life Time	5000h	≥ 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 200% 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	105°C Voltage treatment: After test: U_R to be applied for 30 min, > 16h before measurement

Dimensions

mm



Frequency Coefficient

Frequency	50/60Hz	120Hz	300Hz	1kHz	10kHz	≥ 50kHz
Factor	0.77	1.00	1.16	1.30	1.41	1.43

Temperature Coefficient

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

Ratings for CD296Q QK 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)	-
450 (500) 2W	220	964	482	1.22	25X35	ECS2WQK221M □□ 250035
		964	482	1.15	30X25	ECS2WQK221M □□ 300025
	270	786	393	1.39	25X40	ECS2WQK271M □□ 250040
		786	393	1.32	30X30	ECS2WQK271M □□ 300030
	330	640	320	1.58	25X45	ECS2WQK331M □□ 250045
		640	320	1.5	30X35	ECS2WQK331M □□ 300035
		640	320	1.41	35X30	ECS2WQK331M □□ 350030
	390	544	272	1.7	25X50	ECS2WQK391M □□ 250050
		544	272	1.68	30X40	ECS2WQK391M □□ 300040
		544	272	1.65	35X35	ECS2WQK391M □□ 350035
	470	440	220	1.96	30X45	ECS2WQK471M □□ 300045
		440	220	1.92	35X40	ECS2WQK471M □□ 350040
	560	380	190	2.28	30X50	ECS2WQK561M □□ 300050
		380	190	2.15	35X45	ECS2WQK561M □□ 350045
	680	320	160	2.63	30X60	ECS2WQK681M □□ 300060
		320	160	2.5	35X50	ECS2WQK681M □□ 350050
500 (550) 2H	180	958	479	1.18	25X45	ECS2HQB181M □□ 250045
		958	479	1.11	30X30	ECS2HQB181M □□ 300030
	220	820	410	1.33	25X50	ECS2HQB221M □□ 250050
		820	410	1.28	30X40	ECS2HQB221M □□ 300040
	270	688	344	1.44	30X40	ECS2HQB271M □□ 300040
		688	344	1.34	35X30	ECS2HQB271M □□ 350030
	330	563	281	1.66	30X50	ECS2HQB331M □□ 300050
		563	281	1.57	35X40	ECS2HQB331M □□ 350040
	390	476	238	1.85	30X55	ECS2HQB391M □□ 300055
		476	238	1.78	35X50	ECS2HQB391M □□ 350050
	470	395	198	2.1	35X55	ECS2HQB471M □□ 350055

Customer products are available on request.

Life Time Diagram

