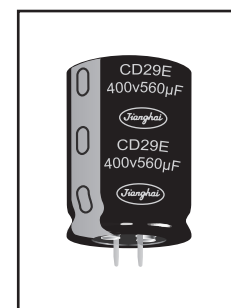
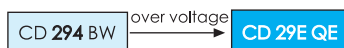


CD 29E QE SERIES



2000h at 105°C

- Withstanding over voltage
- PCB Mounting

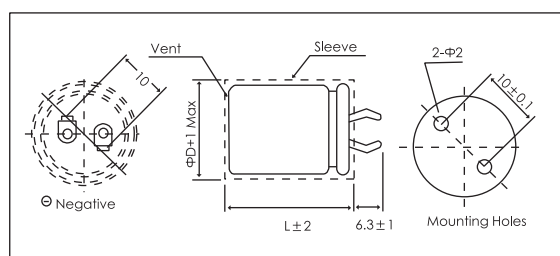


Items	Characteristics		
Operating Temperature Range (°C)	-25 ~ 105		
Voltage Range (V)	200 ~ 450		
Capacitance Range (μF)	56 ~ 1500		
Capacitance Tolerance (20°C, 120Hz)	± 20%		
Leakage Current (μA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 1.5mA, 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	0.20
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	200 ~ 450	
	Impedance Ratio $Z_{-25°C} / Z_{+20°C}$	4	

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	4000h	≥ 180000h	2000h	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 $1.4 \times I_R$ 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



Frequency Coefficient

Frequency Voltage (V)	50/60Hz	120Hz	300Hz	1kHz	10kHz	≥50kHz
	≤ 250	0.80	1.00	1.17	1.32	1.45
> 250	0.80	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

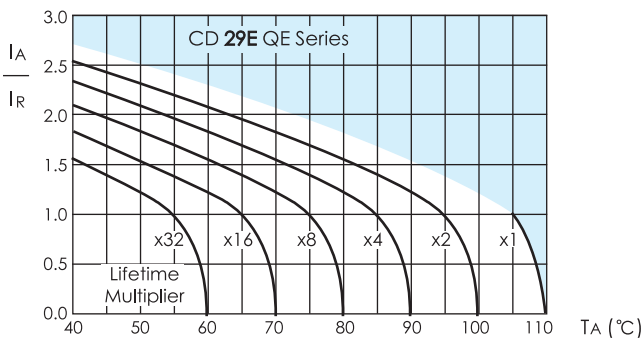
Ratings for CD 29E QE Series

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)	-
200 (250) 2D	150	1327	708	0.71	22×25	ECS2DQE151M□□220025
		1106	590	0.78	22×30	ECS2DQE181M□□220030
	220	905	483	0.98	22×30	ECS2DQE221M□□220030
		905	483	0.98	25×25	ECS2DQE221M□□250025
	270	737	393	1.15	22×35	ECS2DQE271M□□220035
		737	393	1.15	25×30	ECS2DQE271M□□250030
	330	603	322	1.30	22×40	ECS2DQE331M□□220040
		603	322	1.30	25×30	ECS2DQE331M□□250030
	390	510	272	1.40	22×50	ECS2DQE391M□□220050
		510	272	1.40	25×35	ECS2DQE391M□□250035
		510	272	1.40	30×25	ECS2DQE391M□□250025
	470	423	226	1.51	25×40	ECS2DQE471M□□250040
		423	226	1.51	30×30	ECS2DQE471M□□300030
	560	355	190	1.70	25×45	ECS2DQE561M□□250045
		355	190	1.70	30×30	ECS2DQE561M□□300030
		355	190	1.70	35×25	ECS2DQE561M□□350025
	680	293	137	1.88	30×35	ECS2DQE681M□□300035
		293	137	1.88	35×30	ECS2DQE681M□□350030
	820	243	113	2.14	30×40	ECS2DQE821M□□300040
		243	113	2.14	35×30	ECS2DQE821M□□350030
	1000	199	80	2.37	30×50	ECS2DQE102M□□300050
		199	80	2.37	35×35	ECS2DQE102M□□350035
	1200	166	66	2.61	35×40	ECS2DQE122M□□350040
	1500	133	53	3.17	35×50	ECS2DQE152M□□350050
250 (300) 2E	120	1659	885	0.68	22×25	ECS2EQE121M□□220025
		1106	590	0.88	22×30	ECS2EQE181M□□220030
	180	1106	590	0.88	25×25	ECS2EQE181M□□250025
		905	483	1.09	22×35	ECS2EQE221M□□220035
	220	905	483	1.09	25×30	ECS2EQE221M□□250030
		737	393	1.21	22×40	ECS2EQE271M□□220040
	270	737	393	1.21	25×35	ECS2EQE271M□□250035
		737	393	1.21	30×25	ECS2EQE271M□□300025
	330	603	281	1.32	22×45	ECS2EQE331M□□220045
		603	281	1.32	25×40	ECS2EQE331M□□250040
		603	281	1.32	30×30	ECS2EQE331M□□300030
	390	510	238	1.57	22×50	ECS2EQE391M□□220050
		510	238	1.57	25×45	ECS2EQE391M□□250045
		510	238	1.57	30×30	ECS2EQE391M□□300030
	470	423	198	1.70	25×50	ECS2EQE471M□□250050
		423	198	1.70	30×35	ECS2EQE471M□□300035
	560	355	166	1.89	30×40	ECS2EQE561M□□300040
		355	166	1.89	35×30	ECS2EQE561M□□350030
	680	293	137	2.20	30×45	ECS2EQE681M□□300045
		293	137	2.20	35×35	ECS2EQE681M□□350035
	820	243	97	2.45	30×50	ECS2EQE821M□□300050
		243	97	2.45	35×40	ECS2EQE821M□□350040
	1000	199	80	2.70	35×45	ECS2EQE102M□□350045
	1200	166	66	3.29	35×50	ECS2EQE122M□□350050

U_R (Surge Voltage) Code	Rated Capacitance	Max ESR 120Hz	Typ ESR 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
400 (450) 2G	68	2927	1171	0.58	22×25	ECS2GQE680M□□220025
		2427	971	0.68	22×30	ECS2GQE820M□□220030
	82	2427	971	0.68	25×25	ECS2GQE820M□□250025
		1990	796	0.79	22×35	ECS2GQE101M□□220035
	100	1990	796	0.79	25×30	ECS2GQE101M□□250030
		1990	553	0.91	22×40	ECS2GQE121M□□220040
		1990	553	0.91	25×35	ECS2GQE121M□□250035
	120	1990	553	0.91	30×25	ECS2GQE121M□□300025
		1327	442	0.99	22×45	ECS2GQE151M□□220045
	150	1327	442	0.99	25×35	ECS2GQE151M□□250035
		1106	369	1.16	22×50	ECS2GQE181M□□220050
	180	1106	369	1.16	25×40	ECS2GQE181M□□250040
		1106	369	1.16	30×30	ECS2GQE181M□□300030
	220	905	302	1.28	25×45	ECS2GQE221M□□250045
		905	302	1.28	30×35	ECS2GQE221M□□300035
	270	737	246	1.43	25×50	ECS2GQE271M□□250050
		737	246	1.43	30×40	ECS2GQE271M□□300040
	330	737	246	1.43	35×35	ECS2GQE271M□□350035
		603	201	1.67	30×45	ECS2GQE331M□□300045
	390	603	201	1.67	35×40	ECS2GQE331M□□350040
		510	136	1.90	30×50	ECS2GQE391M□□300050
	470	510	136	1.90	35×45	ECS2GQE391M□□350045
		423	113	2.16	35×50	ECS2GQE471M□□350050
	450 (500) 2W	56	4739	1185	0.44	22×25
68			3903	976	0.53	22×30
82		3236	809	0.64	22×35	ECS2WQE820M□□220035
		3236	809	0.64	25×25	ECS2WQE820M□□250025
100		2654	663	0.70	22×40	ECS2WQE101M□□220040
		2654	663	0.70	25×30	ECS2WQE101M□□250030
120		2212	442	0.76	22×45	ECS2WQE121M□□220045
		2212	442	0.76	25×35	ECS2WQE121M□□250035
		2212	442	0.76	30×30	ECS2WQE121M□□300030
150		1769	354	0.90	22×50	ECS2WQE151M□□220050
		1769	354	0.90	25×40	ECS2WQE151M□□250040
		1769	354	0.90	30×35	ECS2WQE151M□□300035
220		1769	354	0.90	35×30	ECS2WQE151M□□350030
		1206	241	1.13	25×45	ECS2WQE221M□□250045
		1206	241	1.13	30×40	ECS2WQE221M□□300040
270		1206	241	1.13	35×35	ECS2WQE221M□□350035
		983	197	1.30	25×50	ECS2WQE271M□□250050
		983	197	1.30	30×45	ECS2WQE271M□□300045
330		983	197	1.30	35×30	ECS2WQE271M□□350030
		804	161	1.45	30×50	ECS2WQE331M□□300050
		804	161	1.45	35×45	ECS2WQE331M□□350045
390		680	136	1.72	35×50	ECS2WQE391M□□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

DC Overvoltage Test Conditions

Rated Voltage (Vdc)	Nominal Capacitance (μF)	Current Limit (A)	Test Voltage (Vdc)
200	<330	4	300/375
	330 ≤ C < 470	5	
	≥ 470	7	
250	<330	4	350/450
	330 ≤ C < 470	5	
	≥ 470	7	
400	<100	2	500/600
	100 ≤ C < 220	4	
	≥ 220	7	
450	<100	2	550/675
	100 ≤ C < 220	4	
	≥ 220	7	

The vent will operate and the capacitor shall become an open circuit without burning materials when the following test DC voltage is applied.