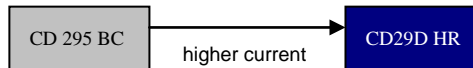


# CD 29D HR SERIES



5000h at 85 °C

- Small Size
- Long Useful Life
- HighRipple Current
- Industrial Power Supplies and Inverters



Items	Characteristics												
Operating Temperature Range(°C)	-40 ~ +85												
Voltage Range (V)	160~450												
Capacitance Range(µF)	47~2200												
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)	<table border="1"> <tr> <td>Rated Voltage(V)</td> <td>160</td> <td>200</td> <td>250</td> <td>400</td> <td>450</td> </tr> <tr> <td>Tan δ(max)</td> <td colspan="3">0.15</td> <td colspan="2">0.12</td> </tr> </table>	Rated Voltage(V)	160	200	250	400	450	Tan δ(max)	0.15			0.12	
Rated Voltage(V)	160	200	250	400	450								
Tan δ(max)	0.15			0.12									
Stability at Low Temperature (Impedance Ratio at 120Hz)	<table border="1"> <tr> <td>Rated Voltage(V)</td> <td>160~450</td> </tr> <tr> <td>Z<sub>-40°C</sub>/ Z<sub>+20°C</sub></td> <td>4</td> </tr> </table>	Rated Voltage(V)	160~450	Z <sub>-40°C</sub> / Z <sub>+20°C</sub>	4								
Rated Voltage(V)	160~450												
Z <sub>-40°C</sub> / Z <sub>+20°C</sub>	4												

	Useful Life		Load Life	Endurance Test	Shelf Life
Life Time	7000h	>100000h	5000h	5000h	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	U <sub>R</sub>	U <sub>R</sub>	U <sub>R</sub>	U <sub>R</sub>	<div style="border: 1px solid black; padding: 5px;">                     After test:                      U<sub>R</sub> to be applied                      for 30min&gt;24h                      before                      measurement                 </div>
Applied Current	I <sub>R</sub>	1.2×I <sub>R</sub>	I <sub>R</sub>	I <sub>R</sub> = 0	
Applied Temperature	85°C	40°C	85°C	85°C	

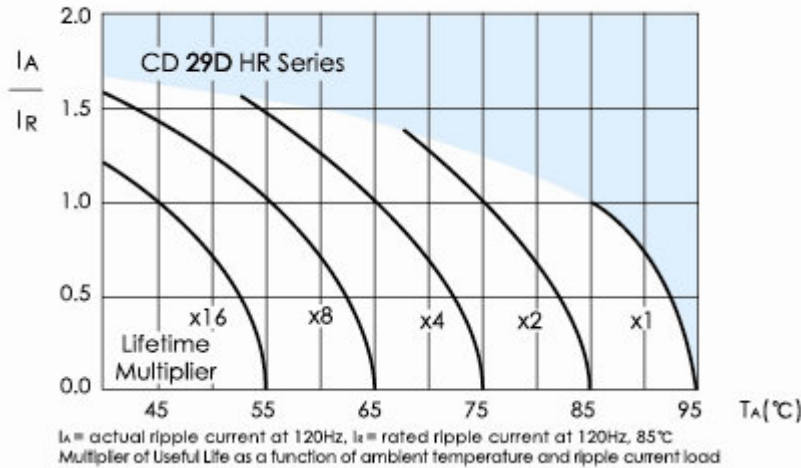
## Frequency coefficient

Frequency	50/60Hz	120Hz	300Hz	1kHz	10kHz	$\geq$ 50kHz
coefficient	0.80	1.00	1.16	1.30	1.41	1.43

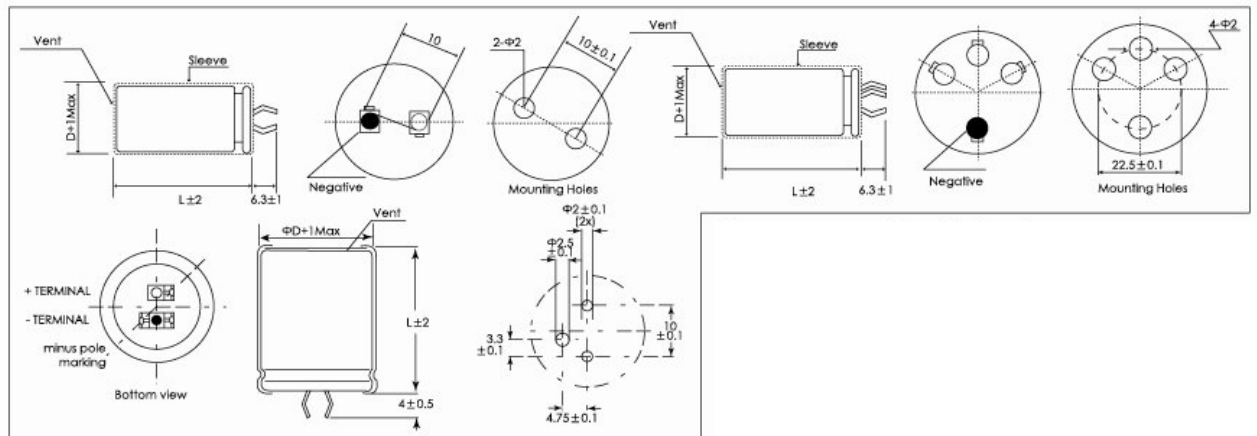
## Temperature Coefficient

Temperature(°C)	+40	+55	+70	+85
coefficient	1.7	1.5	1.3	1.0

## Lifetime Diagram



## Dimensions



## Ratings for CD29D HR Series

$U_R$ (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 100kHz	Size Φ DxL	P/N
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
160 (200) 2C	330	603	355	1.5	22x25	ECS2CHR331M□□220025
	390	510	300	1.6	25x25	ECS2CHR391M□□250025
	470	424	245	1.8	22X35	ECS2CHR471M□□220035
	560	355	215	2.1	22X35	ECS2CHR561M□□220035
		355	215	2.2	25X30	ECS2CHR561M□□250030
		355	215	2.1	30X25	ECS2CHR561M□□300025
	680	293	178	2.6	22X40	ECS2CHR681M□□220040
		293	178	2.5	25X35	ECS2CHR681M□□250035
	820	243	145	2.8	22X50	ECS2CHR821M□□220050
		243	145	2.7	25X40	ECS2CHR821M□□250040
		243	145	2.9	30X30	ECS2CHR821M□□300030

$U_R$ (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 100kHz	Size Φ DxL	P/N
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
400 (450) 2G	68	2342	960	0.62	22X25	ECS2GHR680M□□220025
	100	1592	600	0.81	22X30	ECS2GHR101M□□220030
		1592	660	0.83	25X25	ECS2GHR101M□□250025
	120	1327	550	0.93	22X35	ECS2GHR121M□□220035
	150	1062	440	1.2	22X40	ECS2GHR151M□□220040
		1062	440	1.2	25X30	ECS2GHR151M□□250030
		1062	440	1.2	30X25	ECS2GHR151M□□300025
	180	885	360	1.3	22X45	ECS2GHR181M□□220045
		885	360	1.3	25X35	ECS2GHR181M□□250035
		885	360	1.3	30X30	ECS2GHR181M□□300030
		885	180	1.3	35X25	ECS2GHR181M□□350025

# CD 29D HR SERIES



200 (250) 2D	1000	243	145	2.8	35X25	ECS2CHR821M□□350025
		199	115	3.3	25X45	ECS2CHR102M□□250045
		199	115	3.4	30X35	ECS2CHR102M□□300035
		199	115	3.3	35X30	ECS2CHR102M□□350030
	1200	166	95	3.7	25X50	ECS2CHR122M□□250050
		166	95	3.8	30X40	ECS2CHR122M□□300040
		166	95	3.6	35X35	ECS2CHR122M□□350035
	1500	133	75	4.4	30X45	ECS2CHR152M□□300045
		133	75	4.3	35X40	ECS2CHR152M□□350040
	1800	111	75	4.4	35X45	ECS2CHR182M□□350045
2200	91	58	4.9	35X50	ECS2CHR222M□□350050	
250 (300) 2E	220	905	375	1.2	22X25	ECS2DHR221M□□220025
		603	258	1.5	22X30	ECS2DHR331M□□220030
	330	603	258	1.6	25X25	ECS2DHR331M□□250025
		510	221	1.8	22X35	ECS2DHR391M□□220035
	390	510	221	1.8	25X30	ECS2DHR391M□□250030
		424	175	2	22X40	ECS2DHR471M□□220040
	470	424	175	2.1	30X25	ECS2DHR471M□□300025
		355	150	2.2	22X45	ECS2DHR561M□□220045
	560	355	150	2.2	25X35	ECS2DHR561M□□250035
		355	150	2.3	30X30	ECS2DHR561M□□300030
		355	150	2.2	35X25	ECS2DHR561M□□350025
	680	293	128	2.6	25X40	ECS2DHR681M□□250040
		293	128	2.4	30X30	ECS2DHR681M□□300030
	820	243	105	2.7	25X50	ECS2DHR821M□□250050
		243	105	2.8	30X40	ECS2DHR821M□□300040
		243	105	2.6	35X30	ECS2DHR821M□□350030
	1000	199	80	3.4	30X40	ECS2DHR102M□□300040
		199	80	3.6	35X35	ECS2DHR102M□□350035
	1200	166	70	3.8	30X50	ECS2DHR122M□□300050
		166	70	3.7	35X40	ECS2DHR122M□□350040
1500	133	55	4.2	35X50	ECS2DHR152M□□350050	
250 (300) 2E	150	1327	550	0.92	22X25	ECS2EHR151M□□220025
	180	1106	470	0.98	22X25	ECS2EHR181M□□220025
	220	905	370	1.25	22X30	ECS2EHR221M□□220030
		905	370	1.25	25X25	ECS2EHR221M□□250025
	270	737	370	1.25	22X35	ECS2EHR271M□□220035
	330	603	250	1.64	22X40	ECS2EHR331M□□220040
		603	255	1.64	25X30	ECS2EHR331M□□250030
		603	255	1.64	30X25	ECS2EHR331M□□300025
	390	510	220	1.9	22X45	ECS2EHR391M□□220045
		510	220	1.9	25X35	ECS2EHR391M□□250035
	470	424	175	2.2	22X50	ECS2EHR471M□□220050
		424	175	2.2	25X40	ECS2EHR471M□□250040
		424	175	2.2	30X30	ECS2EHR471M□□300030
		424	175	2.2	35X25	ECS2EHR471M□□350025
	560	355	150	2.4	25X45	ECS2EHR561M□□250045
		355	150	2.4	30X35	ECS2EHR561M□□300035
	680	293	123	2.8	30X40	ECS2EHR681M□□300040
		293	123	2.8	35X30	ECS2EHR681M□□350030
	820	243	105	3.2	30X45	ECS2EHR821M□□300045
		243	105	3.2	35X35	ECS2EHR821M□□350035
1000	199	80	3.7	35X40	ECS2EHR102M□□350040	
1200	166	70	4.1	35X45	ECS2EHR122M□□350045	
1500	133	60	4.6	35X50	ECS2EHR152M□□350050	

220	724	300	1.5	22X50	ECS2GHR221M□□220050	
	724	300	1.5	25X40	ECS2GHR221M□□250040	
	724	300	1.5	30X35	ECS2GHR221M□□300035	
	270	590	240	1.7	25X45	ECS2GHR271M□□250045
		590	240	1.7	30X40	ECS2GHR271M□□300040
		590	240	1.7	35X30	ECS2GHR271M□□350030
	330	483	200	2.1	30X45	ECS2GHR331M□□300045
		483	200	2.1	35X35	ECS2GHR331M□□350035
	390	408	170	2.3	30X50	ECS2GHR391M□□300050
		408	170	2.3	35X40	ECS2GHR391M□□350040
470	339	140	2.7	35X45	ECS2GHR471M□□350045	
560	284	110	3	35X50	ECS2GHR561M□□350050	
450 (500) 2W	47	3388	2800	0.52	22X25	ECS2WHR470M□□220025
	68	2342	1940	0.66	22X30	ECS2WHR680M□□220030
		2342	1940	0.66	25X25	ECS2WHR680M□□250025
	100	1592	1310	0.9	22X35	ECS2WHR101M□□220035
		1592	1310	0.9	25X30	ECS2WHR101M□□250030
		1592	1310	0.9	30X25	ECS2WHR101M□□300025
	120	1327	910	1.1	22X40	ECS2WHR121M□□220040
		1327	910	1.1	25X35	ECS2WHR121M□□250035
	150	1062	880	1.3	22X50	ECS2WHR151M□□220050
		1062	880	1.3	25X40	ECS2WHR151M□□250040
180	1062	880	1.3	30X30	ECS2WHR151M□□300030	
	885	740	1.4	25X45	ECS2WHR181M□□250045	
	885	740	1.4	30X35	ECS2WHR181M□□300035	
220	885	740	1.4	35X25	ECS2WHR181M□□350025	
	724	590	1.6	25X50	ECS2WHR221M□□250050	
	724	590	1.6	30X40	ECS2WHR221M□□300040	
270	724	590	1.6	35X30	ECS2WHR221M□□350030	
	590	490	1.9	30X45	ECS2WHR271M□□300045	
330	590	490	1.9	35X35	ECS2WHR271M□□350035	
390	483	395	2.2	35X40	ECS2WHR331M□□350040	
470	408	300	2.4	35X45	ECS2WHR391M□□350045	
470	339	280	2.8	35X50	ECS2WHR471M□□350050	

Customer products are available on request.

