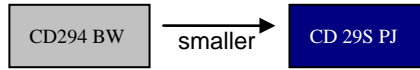


# CD 29S PJ SERIES



2000h at 105°C

- Load life of 2000 hours at 105°C
- High Ripple Current
- Smaller size
- General Industrial Electronics



Items	Characteristics										
Operating Temperature Range(°C)	-40 ~ +105					-25~+105					
Voltage Range (V)	10~100					160~450					
Capacitance Range(µF)	33~10000										
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)	<b>WV (V)</b>	10	16	25	35	50	60	80	100	160~250	350~450
	<b>Tan δ(max)</b>	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.25
Stability at Low Temperature (Impedance Ratio at 120Hz)	<b>Rated Voltage(V)</b>		10~100			160~250			350~450		
	<b>Impedance Ratio</b>	Z <sub>-25°C</sub> / Z <sub>+20°C</sub>	3			3			8		
Z <sub>-40°C</sub> / Z <sub>+20°C</sub>		12			-			-			

Life Time	Useful Life		Load Life	Endurance Test	Shelf Life
		4000h	>180000h	2000h	3000h
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 <sub>R</sub> I <sub>R</sub> 105°C	U <sub>R</sub> 1.4×I <sub>R</sub> 40°C	U <sub>R</sub> I <sub>R</sub> 105°C	U <sub>R</sub> I <sub>R</sub> = 0 105°C	<div style="border: 1px solid black; padding: 5px;">                     After test:                      U<sub>R</sub> to be applied                      for 30min&gt;24h                      before                      measurement                 </div>

## Frequency coefficient

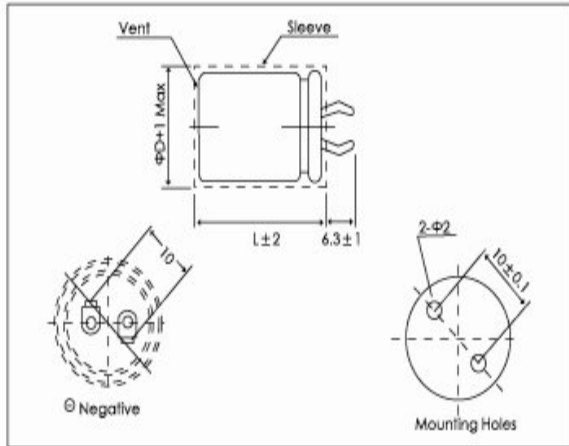
Frequency Rated Voltage(v)	50/60Hz	120Hz	500Hz	1kHz	10kHz	≥ 50kHz
10~100	0.90	1.00	1.10	1.15	1.15	1.15
160~250	0.90	1.00	1.20	1.30	1.45	1.50
350~450	0.85	1.00	1.20	1.30	1.42	1.45

## Temperature Coefficient

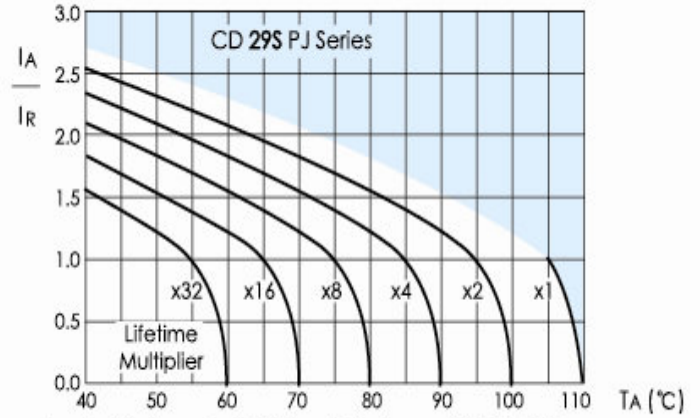
Temperature(°C)	+40	+55	+70	+85	+105
<b>coefficient</b>	2.7	2.5	2.1	1.7	1.0

## Dimensions

mm



## Lifetime Diagram



$I_A$  = actual ripple current at 120Hz,  $I_R$  = rated ripple current at 120Hz, 105°C  
Multiplier of Useful Life as a function of ambient temperature and ripple current load

## Ratings for CD 29S PJ 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 $\phi$ DxL	P/N
(v)	( $\mu$ F)	(m $\Omega$ )	(m $\Omega$ )	(Arms)	(mm)	-
10 (13) 1A	4700	155	109	0.98	22X20	ECS1APJ472M□□220020
	5600	130	91	1.16	25X20	ECS1APJ562M□□250020
	6800	107	75	1.31	25X20	ECS1APJ682M□□250020
	8200	89	62	1.59	30X20	ECS1APJ822M□□300020
	10000	73	51	1.77	30X20	ECS1APJ103M□□300020
16 (20) 1C	3300	201	141	1.06	22X20	ECS1CPJ332M□□220020
	3900	170	119	1.25	25X20	ECS1CPJ392M□□250020
	4700	141	99	1.38	25X20	ECS1CPJ472M□□250020
	5600	119	83	1.68	30X20	ECS1CPJ562M□□300020
25 (32) 1E	6800	98	68	1.80	30X20	ECS1CPJ682M□□300020
	2200	271	190	0.98	22X20	ECS1EPJ222M□□220020
	2700	221	155	1.08	25X20	ECS1EPJ272M□□250020
	3300	181	127	1.29	25X20	ECS1EPJ332M□□250020
35 (44) 1V	3900	153	107	1.58	30X20	ECS1EPJ392M□□300020
	4700	127	89	1.61	30X20	ECS1EPJ472M□□300020
	1500	354	248	0.80	22X20	ECS1VPJ152M□□220020
	1800	295	206	0.94	25X20	ECS1VPJ182M□□250020
50 (63) 1H	2200	241	169	1.04	25X20	ECS1VPJ222M□□250020
	2700	197	138	1.29	30X20	ECS1VPJ272M□□300020
	3300	161	113	1.45	30X20	ECS1VPJ332M□□300020
	1000	464	325	0.87	22X20	ECS1HPJ102M□□220020
63 (79) 1J	1200	387	271	1.02	25X20	ECS1HPJ122M□□250020
	1500	310	217	1.15	25X20	ECS1HPJ152M□□250020
	1800	258	181	1.34	30X20	ECS1HPJ182M□□300020
	2200	211	148	1.60	30X20	ECS1HPJ222M□□300020
80 (100) 1K	680	585	410	0.83	22X20	ECS1JPJ681M□□220020
	820	340	0.99	25X20	ECS1JPJ821M□□250020	
	1000	398	279	1.10	25X20	ECS1JPJ102M□□250020
	1200	332	232	1.20	30X20	ECS1JPJ122M□□300020
	1500	265	186	1.47	30X20	ECS1JPJ152M□□300020
	1800	221	155	1.52	30X20	ECS1JPJ182M□□300020

$U_R$ (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size $\phi$ DxL	P/N
(v)	( $\mu$ F)	(m $\Omega$ )	(m $\Omega$ )	(Arms)	(mm)	-
180 (225) 2K	100	1990	1393	0.50	22x20	ECS2KPJ101M□□220020
	120	1659	1161	0.54	22x20	ECS2KPJ121M□□220020
	150	1327	929	0.63	25x20	ECS2KPJ151M□□250020
	180	1106	774	0.70	25x20	ECS2KPJ181M□□250020
	220	905	633	0.85	30X20	ECS2KPJ221M□□300020
	270	737	516	0.95	30X20	ECS2KPJ271M□□300020
	200 (250) 2D	100	1990	1393	0.51	22x20
120		1659	1161	0.56	22X20	ECS2DPJ121M□□220020
150		1327	929	0.65	25x20	ECS2DPJ151M□□250020
180		1106	774	0.78	30x20	ECS2DPJ181M□□300020
220		905	633	0.85	30x20	ECS2DPJ221M□□300020
250 (300) 2E	68	2927	2049	0.39	22X20	ECS2EPJ680M□□220020
	82	2427	1699	0.45	22x20	ECS2EPJ820M□□220020
	100	1990	1393	0.59	25x20	ECS2EPJ101M□□250020
	120	1659	1161	0.62	25x20	ECS2EPJ121M□□250020
	150	1327	929	0.76	30x20	ECS2EPJ151M□□300020
350 (400) 2V	180	1106	774	0.79	30x20	ECS2EPJ181M□□300020
	47	7058	4941	0.28	22x20	ECS2VPJ470M□□220020
	56	5924	4147	0.34	25x20	ECS2VPJ560M□□250020
	68	4879	3415	0.39	25x20	ECS2VPJ680M□□250020
	82	4046	2832	0.45	30x20	ECS2VPJ820M□□300020
400 (450) 2G	100	3317	2322	0.49	30x20	ECS2VPJ101M□□300020
	39	8506	5954	0.27	22X20	ECS2GPJ390M□□220020
	47	7058	4941	0.31	25X20	ECS2GPJ470M□□250020
	56	5924	4147	0.34	25x20	ECS2GPJ560M□□250020
	68	4879	3415	0.40	30X20	ECS2GPJ680M□□300020
450 (500) 2W	82	4046	2832	0.45	30x20	ECS2GPJ820M□□300020
	33	10053	7037	0.25	22x20	ECS2WPJ330M□□220020
	39	8506	5954	0.28	25x20	ECS2WPJ390M□□250020
	47	7058	4941	0.31	25X20	ECS2WPJ470M□□250020
	56	5924	4147	0.36	30x20	ECS2WPJ560M□□300020
68	4879	3415	0.40	30x20	ECS2WPJ680M□□300020	

Customer products are available on request.

# CD 29S PJ SERIES



	820	405	283	1.04	30X20	ECS1KPJ821M□□300020
	1000	332	232	1.19	30X20	ECS1KPJ102M□□300020
	1200	277	194	1.44	30X20	ECS1KPJ122M□□300020
100 (125) ) 2A	330	804	563	0.60	22X20	ECS2APJ331M□□220020
	390	681	476	0.71	25X20	ECS2APJ391M□□250020
	470	565	395	0.78	25X20	ECS2APJ471M□□250020
	560	474	332	0.95	30X20	ECS2APJ561M□□300020
	680	390	273	1.09	30X20	ECS2APJ681M□□300020
	820	324	227	1.32	30X20	ECS2APJ821M□□300020
160 (200) ) 2C	120	1659	1161	0.53	22X20	ECS2CPJ121M□□220020
	150	1327	929	0.59	22X20	ECS2CPJ151M□□220020
	180	1106	774	0.70	25X20	ECS2CPJ181M□□250020
	220	905	633	0.75	25X20	ECS2CPJ221M□□250020
	270	737	516	0.95	30X20	ECS2CPJ271M□□300020
	330	603	422	1.05	30X20	ECS2CPJ331M□□300020