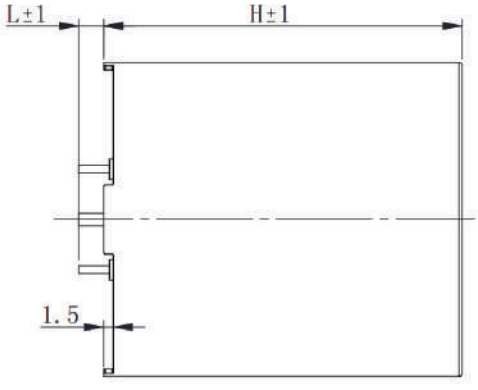
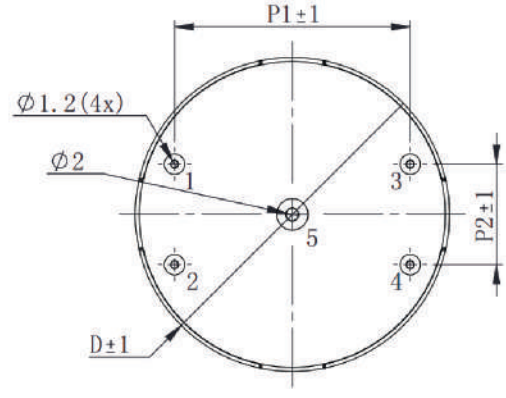
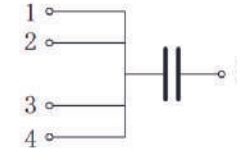
DC-Link Capacitor for PCB

■ Outline Drawing

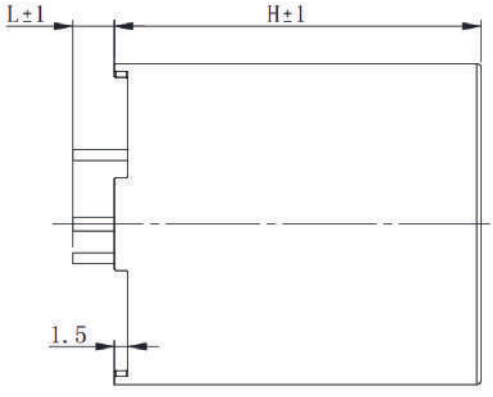


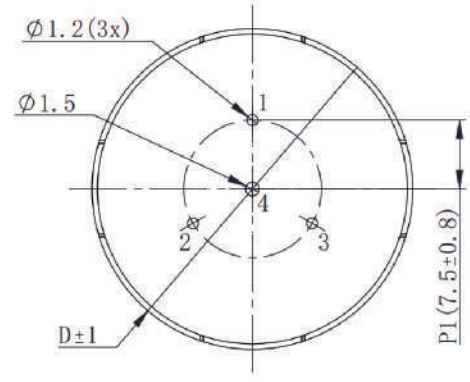


Connection Diagram

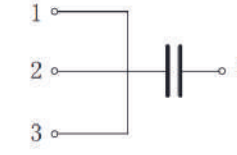


(Type 1)



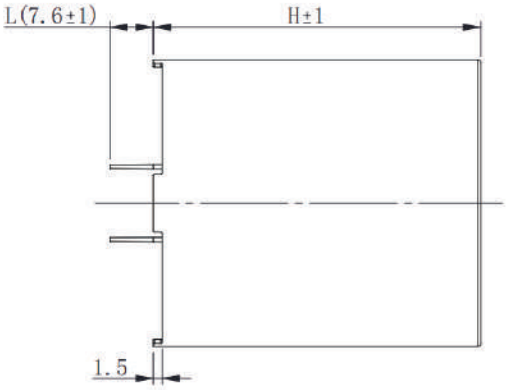


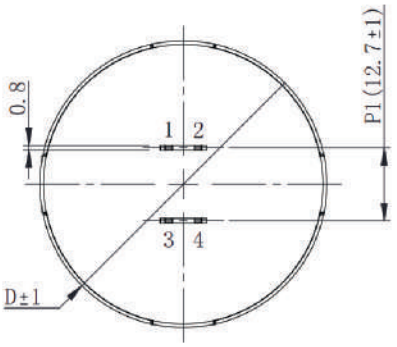
Connection Diagram



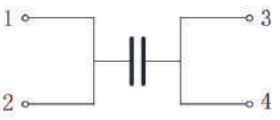
(Type 2)

C3L

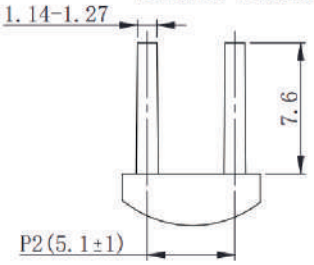




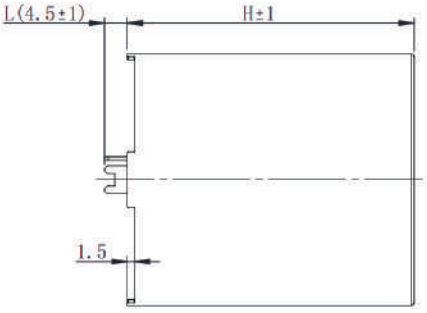
Connection Diagram

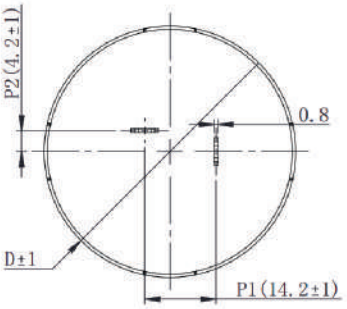


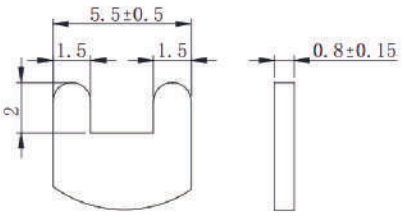
Terminal Diagram



(Type 3)







(Type 4)

■ Features

- Plastic case, Dry construction
- Low ESR, high ripple current ability
- Low L_S
- Long life

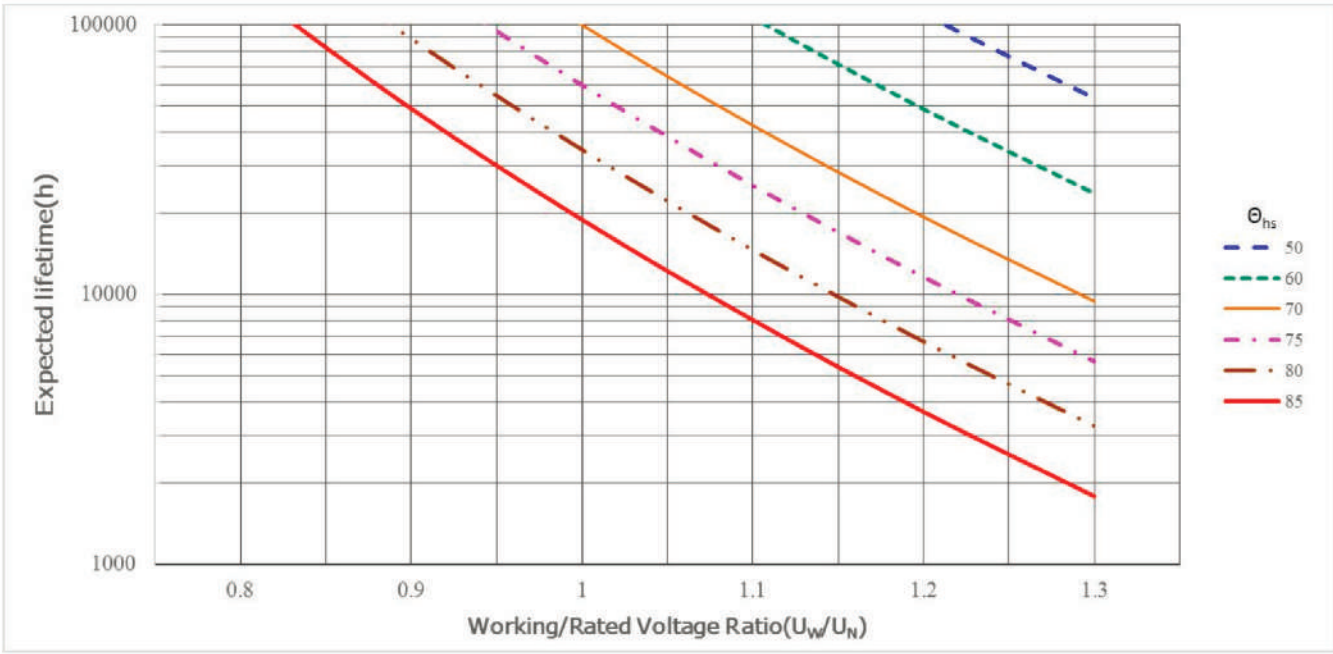
■ Applications

- Used to replace electrolytic capacitor in DC-Link circuits
- Used in small and medium power solar inverter
- Used in welding instruments, central air-conditioning inverter,commercial air conditioning inverter, elevator driver, industrial motor drive

Specifications

Reference Standard	GB/T 17702(IEC 61071)
Climatic Category	40/85/56
Operating Temperature Range	-40°C ~ 85°C (θ_{hs}≤85°C)
Storage temperature range	-40°C ~ 85°C
Voltage Range	500Vdc~1 500Vdc
Capacitance Range	5.8μF ~ 290μF
Capacitance Tolerance	±5%(J); ±10%(K)
Test Voltage Between Terminals	1.5U_N (10s, 20°C±5°C)
Test Voltage Between Terminals And Case	U_N<1 500Vdc, 3 000Vac(10s，50Hz, 20°C±5°C) U_N≥1 500Vdc, ($\sqrt{2}$ U_N+1 000)Vac(10s，50Hz, 20°C±5°C)
tanδ_d	2×10^{-4}
IR×C_N	≥5 000s (20°C, 500Vdc, 1min)
Over Voltage	1.1 U_N(30% of on-load-dur.)
	1 .15U_N (30min/day)
	1.2U_N (5min/day)
	1.3U_N (1min/day)
	1.5U_N(30ms every time, 1 000times during the life of the capacitor)
Expected lifetime	100 000h @ U_N，θ_{hs}=70°C
Failure rate	100 FIT
Max. altitude	2 000m: No derating for current) 2 000m to 5 000m: (Decreasing factor 3% per 500m for current)
Installation	Any Position

For capacitors application, various factors will affect the expected lifetime of capacitors, such as voltage, temperature, current, network harmonics, humidity, lighting or radiation and other unknown factors. The following lifetime curve only considers the effects of voltage and temperature. Based on the qualified results of long-term durability test, the lifetime curve of the capacitor under different working conditions is calculated by using the theoretical calculation formula of lifetime. Therefore, the lifetime curve is only used as a reference for selection, and does not represent the actual service life of the capacitor, nor does it represent the quality assurance requirements.



■ Part number system

The 15 digits part number is formed as follow:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C	3	L												

Digit 1 to 3 Series code

C3L

Digit 4 to 5 D.C. rated voltage

2H=500V	1U=600V	1V=700V
1X=900V	3A=1 000V	1M=1 100V
3L=1 200V	2M=1 300V	4M=1 500V

Digit 6 to 8 Rated capacitance value

for example: 107=10×10^{7}pF=100μF

Digit 9 Capacitance tolerance

J=±5%, K=±10%

Digit 10 to 15 Internal use

■ Technical data

U_N (Vdc)	C_N (μF)	R_s 1kHz (mΩ)	L_s (nH)	R_{th} (K/W)	Î (A)	I_{max} (A)			Dimension (mm)		Weight (kg)	Part number
						40°C	50°C	60°C	ΦD ±1.0	H ±1.0		
500	36	5.4	30	18.6	230	16	16	16	35	52	0.07	C3L2H366-******
	110	2.5	25	11	610	16	16	16	50	57	0.15	C3L2H117-******
	125	2.6	35	10.2	610	16	16	16	50	63	0.17	C3L2H039-******
	290	3.8	55	6.2	610	16	16	16	50	120	0.30	C3L2H297-******
600	30	5.9	30	18.6	230	16	16	16	35	52	0.07	C3L1U306-******
	95	2.6	25	11	630	16	16	16	50	57	0.15	C3L1U956-******
	110	2.7	35	10.2	630	16	16	16	50	63	0.17	C3L1U117-******
	250	4.0	55	6.2	630	16	16	16	50	120	0.30	C3L1U257-******
700	23	6.5	30	18.6	230	16	16	16	35	52	0.07	C3L1V236-******
	70	2.9	25	11	580	16	16	16	50	57	0.15	C3L1V706-******
	80	3.1	35	10.2	580	16	16	16	50	63	0.17	C3L1V806-******
	180	4.4	55	6.2	580	16	16	16	50	120	0.30	C3L1V187-******
900	19	5.9	30	18.6	230	16	16	16	35	52	0.07	C3L1X196-******
	56	3.2	25	11	580	16	16	16	50	57	0.15	C3L1X566-******
	65	3.3	35	10.2	580	16	16	16	50	63	0.17	C3L1X656-******
	150	4.7	55	6.2	580	16	16	16	50	120	0.30	C3L1X157-******
1 000	15	7.8	30	18.7	220	16	16	16	35	52	0.07	C3L3A156-******
	45	3.4	25	11	550	16	16	16	50	57	0.15	C3L3A456-******
	50	3.7	35	10.3	550	16	16	16	50	63	0.17	C3L3A506-******
	120	5.0	55	6.2	550	16	16	16	50	120	0.30	C3L3A127-******
1 100	12	8.7	30	18.7	210	16	15	12	35	52	0.07	C3L1M126-******
	36	3.8	25	11	540	16	16	16	50	57	0.15	C3L1M366-******
	41	4.0	35	10.3	540	16	16	16	50	63	0.17	C3L1M416-******
	95	5.6	55	6.2	540	16	16	16	50	120	0.30	C3L1M956-******
1 200	10	9.5	30	18.7	210	16	14	12	35	52	0.07	C3L3L106-******
	30	4.1	25	11	530	16	16	16	50	57	0.15	C3L3L306-******
	34	4.3	35	10.3	530	16	16	16	50	63	0.17	C3L3L346-******
	78	6.0	55	6.2	530	16	16	16	50	120	0.30	C3L3L786-******
1 300	8	10.7	30	18.7	200	15	13	11	35	52	0.07	C3L2M805-******
	24	4.6	25	11.1	520	16	16	16	50	57	0.15	C3L2M246-******
	28	4.7	35	10.3	520	16	16	16	50	63	0.17	C3L2M286-******
	65	6.5	55	6.2	520	16	16	16	50	120	0.30	C3L2M656-******
1 500	5.8	12.9	30	18.7	180	14	12	10	35	52	0.07	C3L4M585-******
	18	5.3	25	11.1	460	16	16	16	50	57	0.15	C3L4M186-******
	20	5.6	35	10.3	460	16	16	16	50	63	0.17	C3L4M206-******
	48	7.4	55	6.3	460	16	16	16	50	120	0.30	C3L4M486-******

Note: 1. "+" =capacitance tolerance code, J=±5%, K=±10%.

2. "******" = Internal use

3. "I_{max}" = Maxium allowable r.m.s current at θ_{amb}(40°C, 50°C, 60°C). θ_{hs} will reach the maximum value on this condition.

4. "R_{th}" = R_{th} between hotspot and ambient on natural cooling condition.

5. "θ_{hs}" =The hottest spot inside the capacitor, $\theta_{hs} = \theta_{amb} + I_{rms}^2 \times ESR \times R_{th}$.

6. The ESR and I_{max} values of the four product types are different. The values provided by the technical data list are for reference only.

7. Sizes above are normally used dimension,other dimension can be customized in pursuance of customer's request.