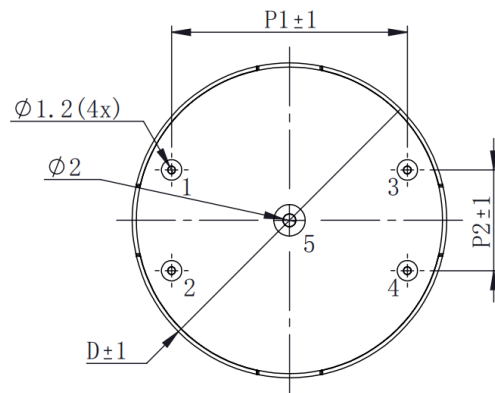
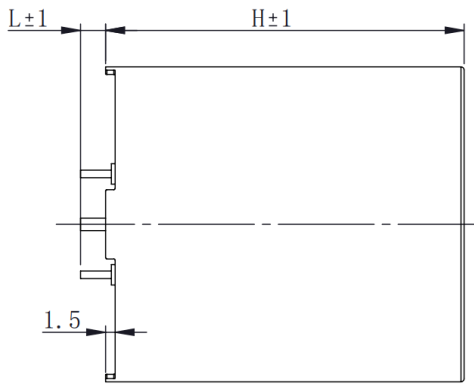


PCB 用 DC-Link 电容器

DC-Link Capacitor for PCB

外形图 Outline Drawing



Connection Diagram

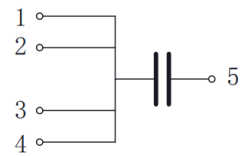
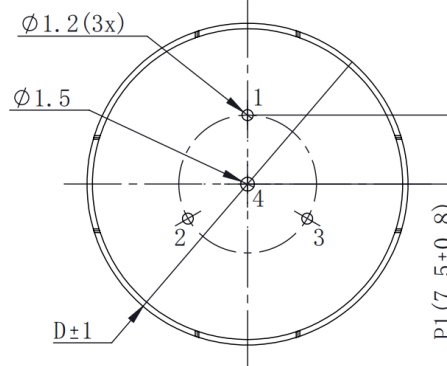
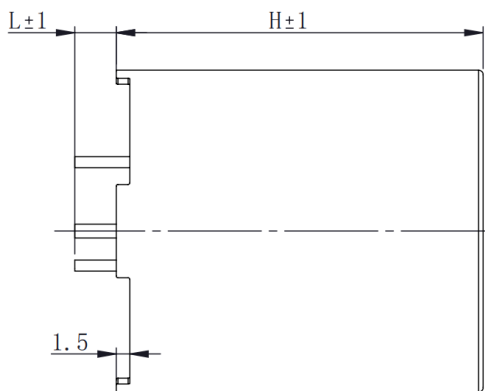


图 1 (Type 1)



Connection Diagram

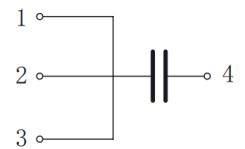
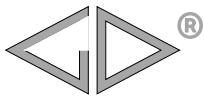


图 2 (Type 2)



C3L

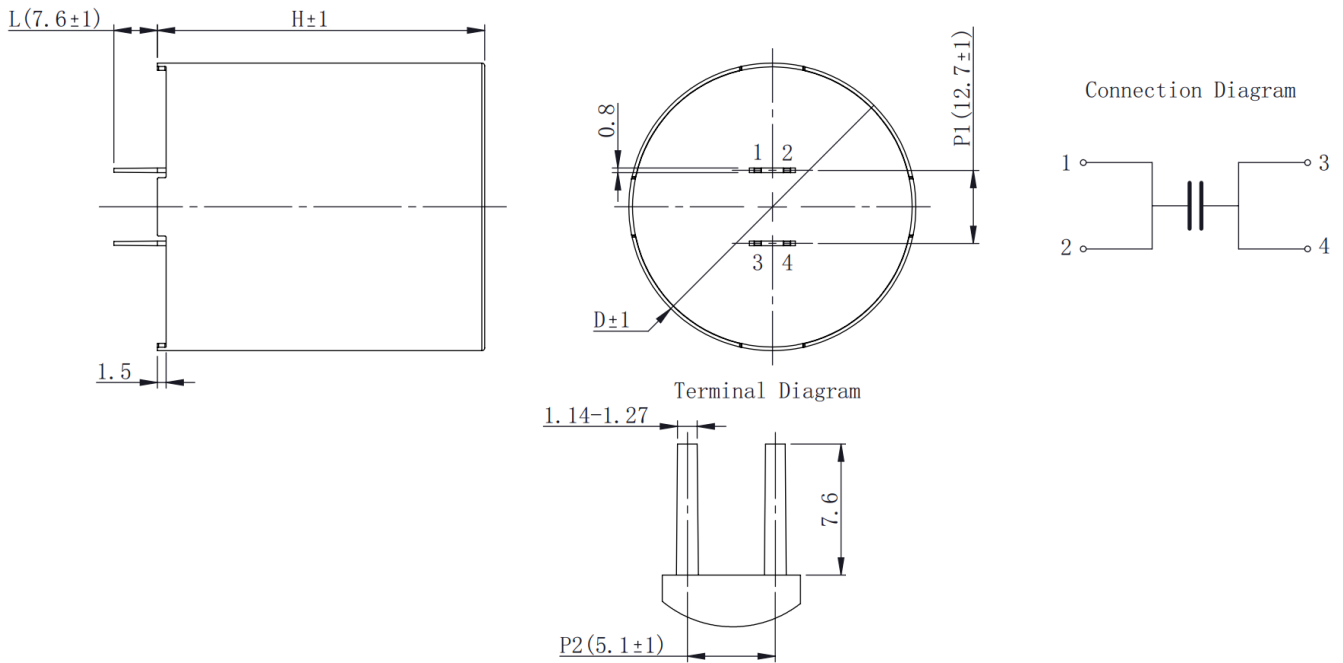


图 3 (Type 3)

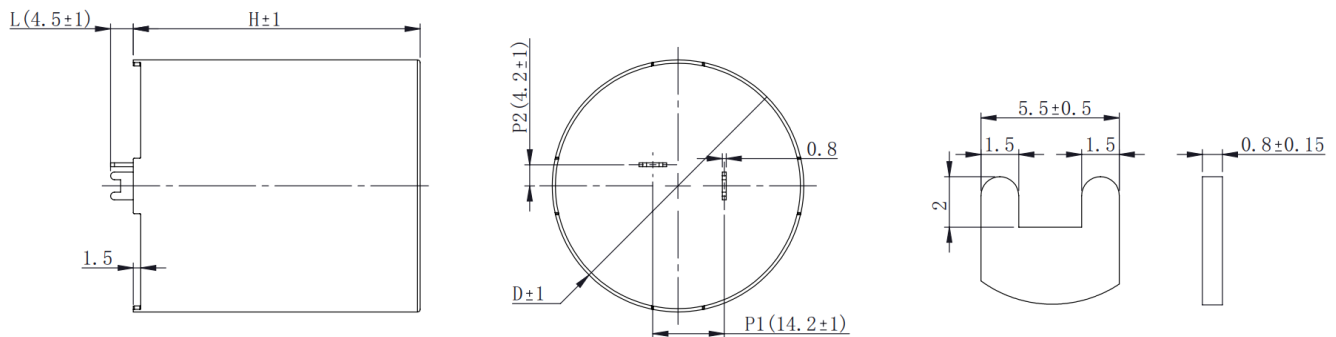


图 4 (Type 4)

■ 特点

- 塑料外壳，干式封装
- 等效串联电阻小，能承受较大的纹波电流
- 自感小
- 寿命长

■ 应用场合

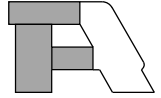
- 用于 DC-Link 电路替代电解电容
- 用于中小功率太阳能逆变器
- 用于焊接设备，中央空调，商用空调变频器，电梯设备，工业电机驱动器

■ 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



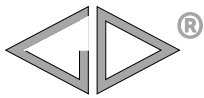
■ 技术要求 Specifications

引用标准 Reference Standard	GB/T 17702(IEC 61071)
气候类别 Climatic Category	40/85/56
工作温度范围 Operating Temperature Range	-40°C ~ 85°C ($\theta_{hs} \leq 85^\circ\text{C}$)
贮存温度范围 Storage temperature range	-40°C ~ 85°C
电压范围 Voltage Range	500Vdc ~ 1 500Vdc
电容量范围 Capacitance Range	5.8 μF ~ 290 μF
电容量偏差 Capacitance Tolerance	$\pm 5\%$ (J); $\pm 10\%$ (K)
耐电压(两极之间) Test Voltage Between Terminals	1.5 U_N (10s, 20°C \pm 5°C)
耐电压(极壳之间) Test Voltage Between Terminals And Case	$U_N < 1\ 500\text{Vdc}, 3\ 000\text{Vac}$ (10s, 50Hz, 20°C \pm 5°C) $U_N \geq 1\ 500\text{Vdc}, (\sqrt{2} U_N + 1\ 000)\text{Vac}$ (10s, 50Hz, 20°C \pm 5°C)
介质损耗角正切 $\tan\delta_d$	2×10^{-4}
IR \times C _N	$\geq 5\ 000\text{s}$ (20°C, 500Vdc, 1min)
过电压 Over Voltage	1.1 U_N (30% of on-load-dur.)
	1.15 U_N (30min/day)
	1.2 U_N (5min/day)
	1.3 U_N (1min/day)
	1.5 U_N (30ms every time, 1 000times during the life of the capacitor)
预期寿命 Expected lifetime	100 000h @ U_N , $\theta_{hs}=70^\circ\text{C}$
失效率 Failure rate	100 FIT
最高使用海拔 Max. altitude	2 000m: 电流不降额(No derating for current) 2 000m to 5 000m: 电流每 500m 按 3%降额 (Decreasing factor 3% per 500m for current)
安装 Installation	任意方向 Any Position

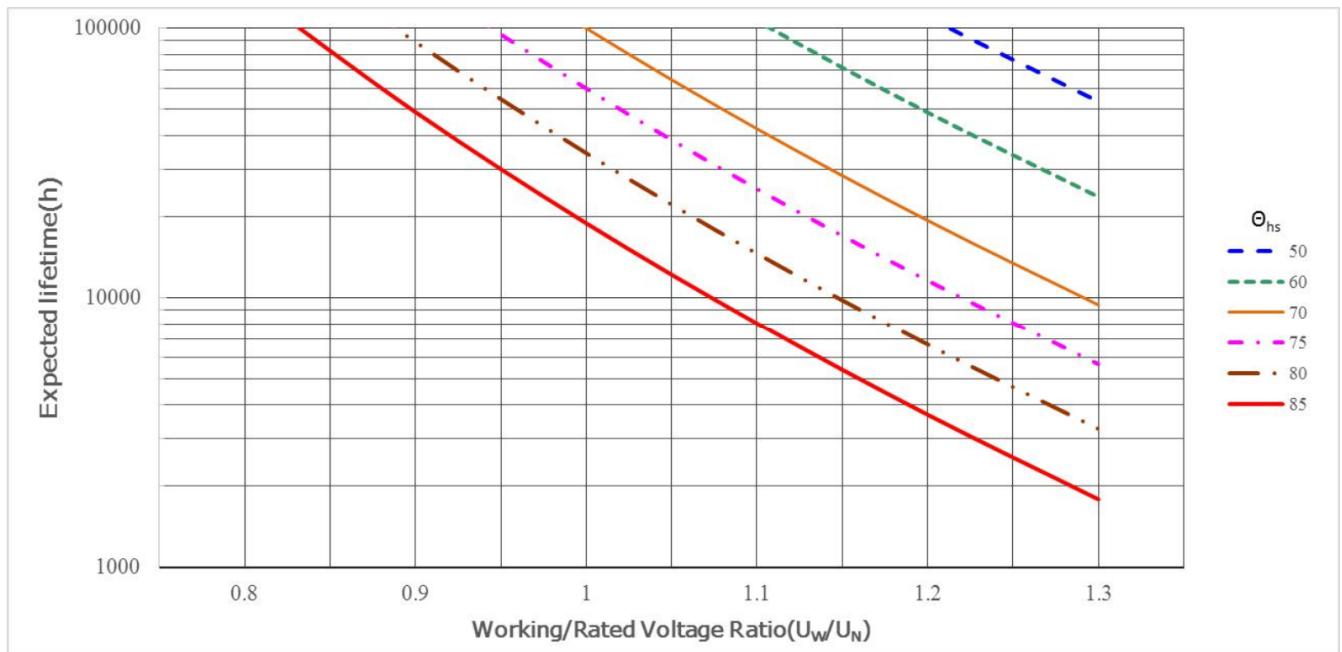
■ 预期寿命曲线 Expected lifetime curve

电容器的应用中，有多种因素会影响到电容器的使用寿命，比如电压、温度、电流、电网谐波、光照或辐射以及其它一些未知的因素。以下预期寿命曲线仅考虑电压、温度的关系，基于长期耐久性试验的合格结果，再通过预期寿命理论计算公式计算该电容在不同工况下的预期寿命。因此，预期寿命曲线仅作为选型参考，而不代表电容器的实际使用寿命，也不代表质保要求。

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.



C3L



产品编码说明 Part number system

15 位产品代码如下:

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												

第 1~3 位 型号代码

C3L

Digit 1 to 3

Series code

C3L

第 4~5 位 直流额定电压

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

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

第 6~8 位 标称容量

举例: $107=10 \times 10^7 \text{pF}=100\mu\text{F}$

Digit 6 to 8

Rated capacitance value

for example: $107=10 \times 10^7 \text{pF}=100\mu\text{F}$

第 9 位 容量偏差

J=±5%, K=±10%

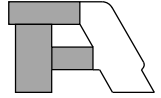
Digit 9

Capacitance tolerance

J=±5%, K=±10%

第 10~15 位 内部特征码

Digit 10 to 15 Internal use



■ 技术参数 Technical data

U _N (Vdc)	C _N (μF)	R _s 1kHz (mΩ)	L _s (nH)	R _{th} (K/W)	Ĵ (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-*****

备注 Note: 1. “+”表示容量偏差。 “+” =capacitance tolerance code, J=±5%, K=±10%.

2. “*****”表示内部特征码。 “*****” = Internal use

3. “I_{max}”是指环境温度(40°C, 50°C, 60°C)下的最大允许电流有效值。在此条件下, 热点温度将达到最大值。

“I_{max}” = Maximum 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}”是指在自然冷却条件下, 电容器热点到环境的热阻。

“R_{th}” = R_{th} between hotspot and ambient on natural cooling condition.

5. “θ_{hs}”是指电容器内部最热点处的温度, 其值为: θ_{hs} = θ_{amb} + I_{rms}² × ESR × R_{th}.

“θ_{hs}” = The hottest spot inside the capacitor, θ_{hs} = θ_{amb} + I_{rms}² × ESR × R_{th}.

6. ESR 和 I_{max} 值四种类型产品之间会有差异, 技术参数表提供的数值仅供参考。

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. 上表中所述的尺寸为本产品系列中的常用壳号尺寸, 其它规格尺寸可按客户要求定制。

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