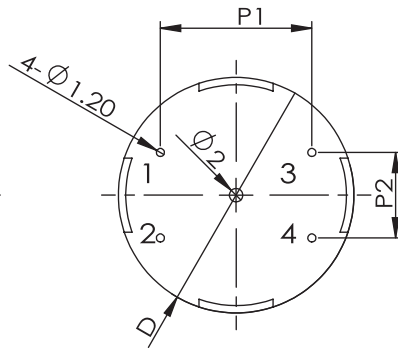
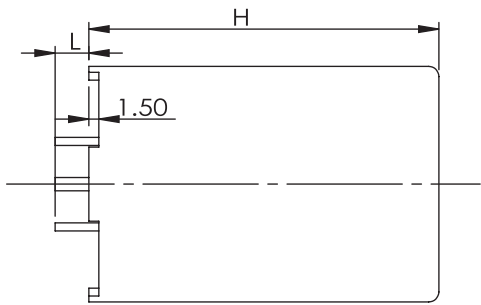




C3L

PCB用DC-Link电容器 DC-Link Capacitor for PCB

■ 外形图 Outline Drawing



Connection diagram

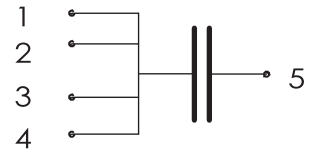
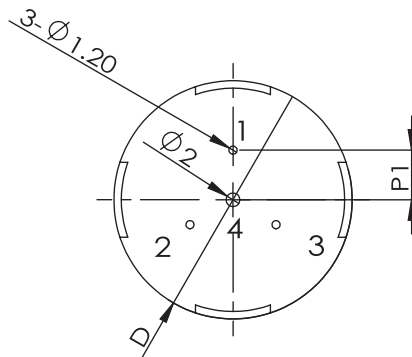
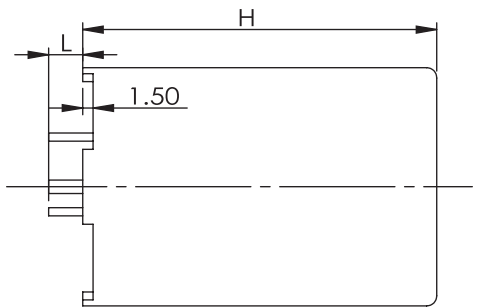


图1 (Type 1)



Connection diagram

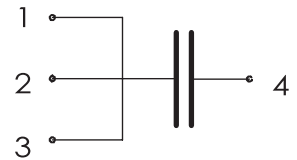


图2 (Type 2)

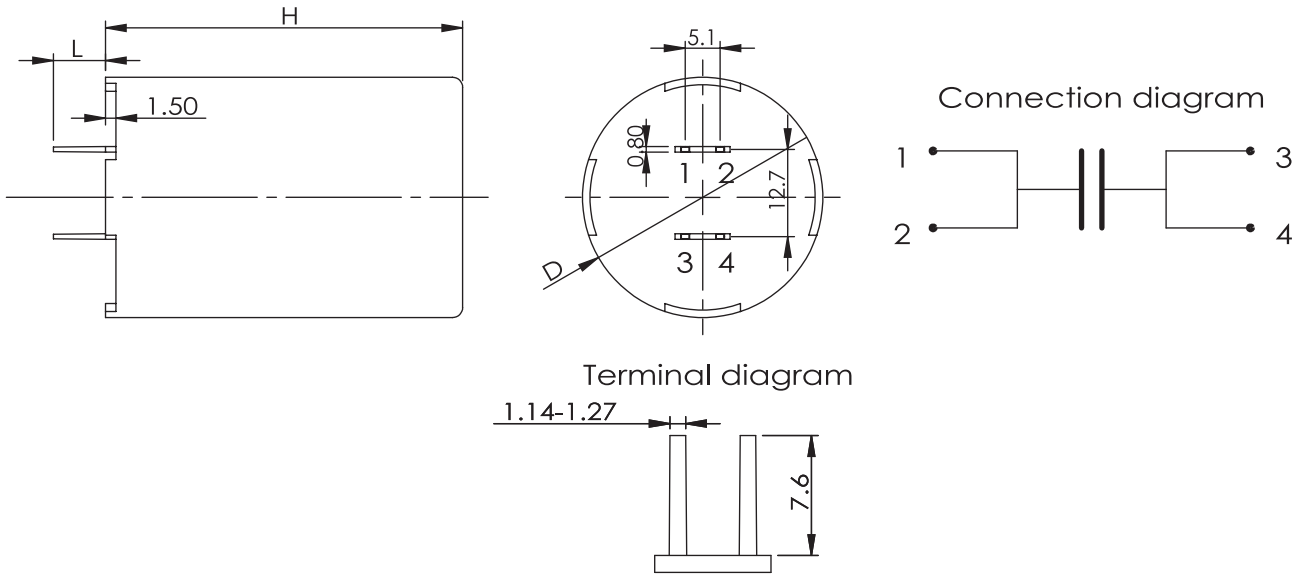


图3 (Type 3)

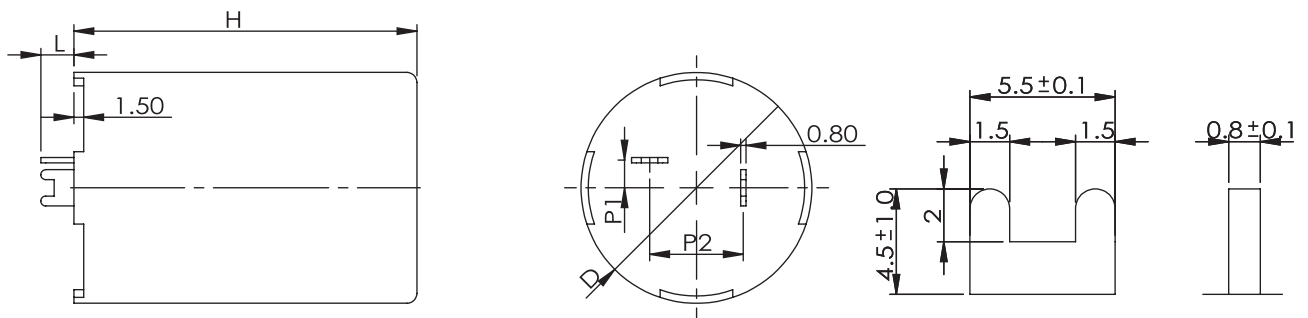


图4 (Type 4)

■ 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 driver



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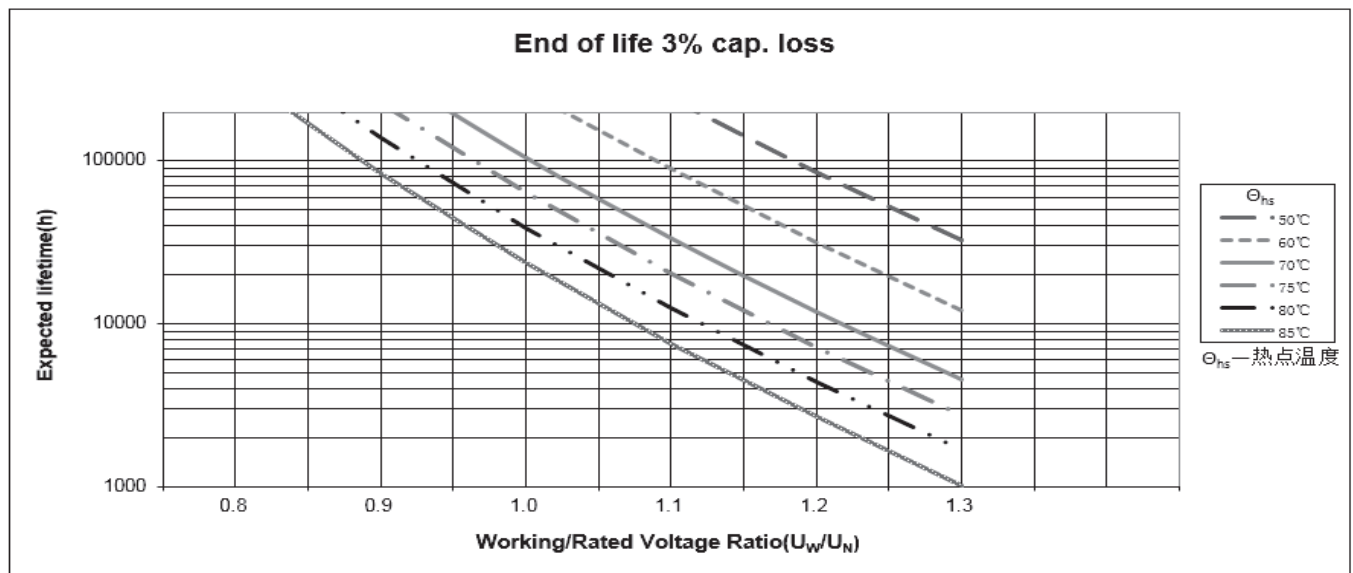
■ 技术要求 Specifications

| | |
|---|---|
| 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 |
| 容量范围 Capacitance Range | 5.8 μF ~ 290 μF |
| 电容量允许偏差 Capacitance Tolerance | $\pm 5\%$ (J), $\pm 10\%$ (K) |
| 耐电压 (两极之间) Test Voltage Between Terminals | 1.5U _N (10s, 20°C $\pm 5^\circ\text{C}$) |
| 耐电压 (极壳之间) Test Voltage Between Terminals And Case | U _N < 1 500Vdc, 3 000Vac(10s, 50Hz, 20°C $\pm 5^\circ\text{C}$) U _N \geq 1 500Vdc, ($\sqrt{2}$ U _N +1 000)Vac(10s, 50Hz, 20°C $\pm 5^\circ\text{C}$) |
| 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 | 1.1U _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, 1 000 times during the life of the capacitor) |
| 最高使用海拔 Max. Altitude | 2 000m |
| 安装 Installation | 任意方向 Any Position |
| 预期寿命 Expected lifetime | 100 000h @ U _N , $\Theta_{hs}=70^\circ\text{C}$ |
| 失效率 Failure rate | 50FIT |

*如果海拔使用高度超过了2 000m, 应该考虑海拔对对流冷却和外绝缘的影响。

*The effect of altitude on convection cooling and external insulation should be taken into consideration, if the altitude exceeds 2 000m.

预期寿命曲线 Expected lifetime curve



产品编码说明 Part number system

■ 18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 | 16 | 17 | 18 |
| C | 3 | L | | | | | | | | | | | | | | | |

| | | | |
|---------|--------------------------------------|----------------|--|
| 第1~3位 | 型号代码 | Digit 1 to 3 | Series code |
| 第4~5位 | 直流额定电压 | Digit 4 to 5 | DC rated voltage |
| | 2H=500V 1U=600V 1V=700V | | 2H=500V 1U=600V 1V=700V |
| | 1X=900V 3A=1 000V 1M=1 100V | | 1X=900V 3A=1 000V 1M=1 100V |
| | 3L=1 200V 2M=1 300V 4M=1 500V | | 3L=1 200V 2M=1 300V 4M=1 500V |
| 第6~8位 | 标称容量 | Digit 6 to 8 | Rated capacitance value |
| | 举例：127=12 × 10 ⁷ pF=120μF | | For example: 127=12 × 10 ⁷ pF=120μF |
| 第9位 | 容量等级 | Digit 9 | Capacitance tolerance |
| | J= ± 5% K= ± 10% | | J= ± 5% K= ± 10% |
| 第10~11位 | 外形尺寸 | Digit 10 to 11 | Dimension code |

| ΦD | H | Code |
|----|-----|------|
| 35 | 52 | 10 |
| 50 | 57 | 20 |
| 50 | 63 | 30 |
| 50 | 120 | 50 |

第12~15位 引出端代码

Digit 12 to 15 Terminals code

■ Table 1 引出端代码 Terminals code

| 第 12 位 Digit 12 | | 第 13 位 Digit 13 | | 第 14 位 Digit 14 | | 第 15 位 Digit 15 | |
|-----------------|----------|-----------------|--|-----------------|---------------------------|-----------------|-------------------------|
| 代码 Code | 类型 Style | 代码 Code | 间距 Pitch 1 and Pitch 2 P1 and P2 | 代码 Code | 引出端长度 Length of terminals | 代码 Code | 长度偏差范围 Length tolerance |
| 1 | Type 1 | 1 | P1=22.5, P2=12.7 (type 1 D35) | 1 | 4.0mm | 0 | ± 0.5mm |
| 2 | Type 2 | 2 | P1=37.5, P2=16.0 (type 1 D50) | 2 | 4.5mm | 1 | 0~-1mm |
| 4 | Type 3 | 3 | P1=7.3 (type 2 D35 or D50) | 3 | 5.0mm | 2 | ± 1.0mm |
| 5 | Type 4 | 4 | P1=12.7, P2=5.1 (type 3 D35 or D50) | 4 | 7.6 mm | | |
| | | 5 | P1=4.2, P2=14.2 (type 4 D35 or D50) | | | | |

第16~18位 内部特征码

Digit 16 to 18 Internal use



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■ 技术参数 Technical data (mm)

| U _N (Vdc) | C _N (μF) | ESR @1kHz (mΩ) | L _s (nH) | R _{th} (K/W) | Ĥ (A) | I _{max} (A) | | | Dimension | | Weight (kg) | Part number |
|-------------------------|------------------------|----------------------|------------------------|--------------------------|----------|-------------------------|------|------|------------|-----------|----------------|-----------------|
| | | | | | | 40°C | 50°C | 60°C | ΦD ±1.0 | H ±1.0 | | |
| 500 | 36 | 5.4 | 30 | 18.6 | 460 | 21 | 19 | 16 | 35 | 52 | 0.07 | C3L2H366-10**** |
| | 110 | 2.5 | 25 | 11 | 1 220 | 40 | 36 | 31 | 50 | 57 | 0.15 | C3L2H117-20**** |
| | 125 | 2.6 | 35 | 10.2 | 1 220 | 40 | 37 | 31 | 50 | 63 | 0.17 | C3L2H039-30**** |
| | 290 | 3.8 | 55 | 6.2 | 1 220 | 40 | 39 | 33 | 50 | 120 | 0.30 | C3L2H297-50**** |
| 600 | 30 | 5.9 | 30 | 18.6 | 460 | 20 | 18 | 15 | 35 | 52 | 0.07 | C3L1U306-10**** |
| | 95 | 2.6 | 25 | 11 | 1 260 | 40 | 35 | 30 | 50 | 57 | 0.15 | C3L1U956-20**** |
| | 110 | 2.7 | 35 | 10.2 | 1 280 | 40 | 36 | 30 | 50 | 63 | 0.17 | C3L1U117-30**** |
| | 250 | 4.0 | 55 | 6.2 | 1 260 | 40 | 38 | 32 | 50 | 120 | 0.30 | C3L1U257-50**** |
| 700 | 23 | 6.5 | 30 | 18.6 | 460 | 19 | 17 | 14 | 35 | 52 | 0.07 | C3L1V236-10**** |
| | 70 | 2.9 | 25 | 11 | 1 200 | 38 | 33 | 28 | 50 | 57 | 0.15 | C3L1V706-20**** |
| | 80 | 3.1 | 35 | 10.2 | 1 200 | 38 | 34 | 29 | 50 | 63 | 0.17 | C3L1V806-30**** |
| | 180 | 4.4 | 55 | 6.2 | 1 160 | 40 | 36 | 30 | 50 | 120 | 0.30 | C3L1V187-50**** |
| 900 | 19 | 5.9 | 30 | 18.6 | 460 | 20 | 18 | 15 | 35 | 52 | 0.07 | C3L1X196-10**** |
| | 56 | 3.2 | 25 | 11 | 1 170 | 36 | 32 | 27 | 50 | 57 | 0.15 | C3L1X566-20**** |
| | 65 | 3.3 | 35 | 10.2 | 1 190 | 37 | 32 | 27 | 50 | 63 | 0.17 | C3L1X656-30**** |
| | 150 | 4.7 | 55 | 6.2 | 1 180 | 40 | 35 | 30 | 50 | 120 | 0.30 | C3L1X157-50**** |
| 1000 | 15 | 7.8 | 30 | 18.7 | 450 | 18 | 16 | 13 | 35 | 52 | 0.07 | C3L3A156-10**** |
| | 45 | 3.4 | 25 | 11 | 1 150 | 35 | 31 | 26 | 50 | 57 | 0.15 | C3L3A456-20**** |
| | 50 | 3.7 | 35 | 10.3 | 1 120 | 35 | 31 | 26 | 50 | 63 | 0.17 | C3L3A506-30**** |
| | 120 | 5.0 | 55 | 6.2 | 1 160 | 38 | 34 | 28 | 50 | 120 | 0.30 | C3L3A127-50**** |
| 1100 | 12 | 8.7 | 30 | 18.7 | 430 | 17 | 15 | 12 | 35 | 52 | 0.07 | C3L1M126-10**** |
| | 36 | 3.8 | 25 | 11 | 1 100 | 33 | 29 | 25 | 50 | 57 | 0.15 | C3L1M366-20**** |
| | 41 | 4.0 | 35 | 10.3 | 1 100 | 33 | 29 | 25 | 50 | 63 | 0.17 | C3L1M416-30**** |
| | 95 | 5.6 | 55 | 6.2 | 1 100 | 36 | 32 | 27 | 50 | 120 | 0.30 | C3L1M956-50**** |
| 1200 | 10 | 9.5 | 30 | 18.7 | 420 | 16 | 14 | 12 | 35 | 52 | 0.07 | C3L3L106-10**** |
| | 30 | 4.1 | 25 | 11 | 1 090 | 32 | 28 | 24 | 50 | 57 | 0.15 | C3L3L306-20**** |
| | 34 | 4.3 | 35 | 10.3 | 1 080 | 32 | 28 | 24 | 50 | 63 | 0.17 | C3L3L346-30**** |
| | 78 | 6.0 | 55 | 6.2 | 1 070 | 35 | 31 | 26 | 50 | 120 | 0.30 | C3L3L786-50**** |
| 1300 | 8 | 10.7 | 30 | 18.7 | 410 | 15 | 13 | 11 | 35 | 52 | 0.07 | C3L2M805-10**** |
| | 24 | 4.6 | 25 | 11.1 | 1 040 | 30 | 26 | 22 | 50 | 57 | 0.15 | C3L2M246-20**** |
| | 28 | 4.7 | 35 | 10.3 | 1 070 | 31 | 27 | 23 | 50 | 63 | 0.17 | C3L2M286-30**** |
| | 65 | 6.5 | 55 | 6.2 | 1 040 | 33 | 30 | 25 | 50 | 120 | 0.30 | C3L2M656-50**** |
| 1500 | 5.8 | 12.9 | 30 | 18.7 | 370 | 14 | 12 | 10 | 35 | 52 | 0.07 | C3L4M585-10**** |
| | 18 | 5.3 | 25 | 11.1 | 980 | 28 | 25 | 21 | 50 | 57 | 0.15 | C3L4M186-20**** |
| | 20 | 5.6 | 35 | 10.3 | 950 | 28 | 25 | 21 | 50 | 63 | 0.17 | C3L4M206-30**** |
| | 48 | 7.4 | 55 | 6.3 | 960 | 31 | 28 | 23 | 50 | 120 | 0.30 | C3L4M486-50**** |

备注: 1. “-”表示容量偏差。 “-” =capacitance tolerance code, J= ± 5.0%,K= ± 10%.

2. “****”表示引出端代码(见table1)。

“****” =terminals code(refer to table1).

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

“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}”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.上表中所列的尺寸为本产品系列中的常用壳号尺寸,其它规格尺寸也可以生产。引出端子尺寸参照国家标准。

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

Sizes of terminals please refer to corresponding national standard.

6.* Θ_{hs}=Θ_{amb} + I_{rms}² × ESR × R_{th}.