

## 代码编制规则 Part Number

| 1                          | 2                        | 3                                    | 4                   | 5 | 6                           | 7                                | 8                 | 9                            | 10 | 11               | 12               | 13                       | 14 | 15 | 16 | 17 | 18 | 19 |
|----------------------------|--------------------------|--------------------------------------|---------------------|---|-----------------------------|----------------------------------|-------------------|------------------------------|----|------------------|------------------|--------------------------|----|----|----|----|----|----|
| F                          | C                        | S                                    | 2                   | F | A                           | N                                | 5                 | 0                            | 5  | K                | B                | I                        | F  | 2  | 7  | 0  | 0  | B  |
| 电容器类型<br>Capacitor<br>Type | 产品外形<br>Product<br>Shape | 额定电压代码<br>Rated Voltage<br>Code (AC) | 系列代码<br>Series Code |   | 容量代码<br>Capacitance<br>Code | 容量偏差<br>Capacitance<br>Tolerance | 引线类型<br>Pin Style | 外壳尺寸代码*<br>Dimension<br>Code |    | 引线间距<br>Pitch P1 | 引线间距<br>Pitch P2 | 引线直径<br>Lead<br>diameter |    |    |    |    |    |    |
| FC=Film Capacitor          | Square=S                 | 160=1G                               | CBB238=AN           |   | 1=105                       | ±5%=J                            | 4Pin, 5mm=A       | 32*33*18=IF                  |    | 27.5=27          | 0=00             | 0.6=A                    |    |    |    |    |    |    |
|                            |                          | 250=2F                               |                     |   | 2.2=225                     | ±10%=K                           | 2Pin, 5mm=B       |                              |    | 37.5=37          | 10.2=10          | 0.8=B                    |    |    |    |    |    |    |
|                            |                          | 280=2J                               |                     |   | 4.7=475                     | Special=S                        | 2pin, 长引线=C       |                              |    | 52.5=52          | 20.3=20          | 1.0=C                    |    |    |    |    |    |    |
|                            |                          | 350=3F                               |                     |   |                             |                                  | 2pin, 9.2mm=D     |                              |    |                  |                  | 1.2=D                    |    |    |    |    |    |    |
|                            |                          | 400=4A                               |                     |   |                             |                                  | 2pin, 8.2mm=E     |                              |    |                  |                  | 0.5=E                    |    |    |    |    |    |    |
|                            |                          | 450=4F                               |                     |   |                             |                                  | 4pin, 4mm=S       |                              |    |                  |                  |                          |    |    |    |    |    |    |
|                            |                          |                                      |                     |   |                             |                                  | 2pin, 4.5mm=T     |                              |    |                  |                  |                          |    |    |    |    |    |    |
|                            |                          |                                      |                     |   |                             |                                  | 2pin, 3.5mm=U     |                              |    |                  |                  |                          |    |    |    |    |    |    |
|                            |                          |                                      | 2pin, 3.2mm=V       |   |                             |                                  |                   |                              |    |                  |                  |                          |    |    |    |    |    |    |

\*外壳尺寸表

## Features

- Used in AC circuits as input or output filter
- PP film design, good temperature characteristics
- Stable capacity
- Low ESR, high RMS current handing capabilities
- Self-healing property
- Plastic box, filled with fire-retardant resin
- 2 or 4 tinned copper wires for PCB mounting

## Applications

- Solar inverters,
- UPS power supply
- Motor Driver systems

## 特点

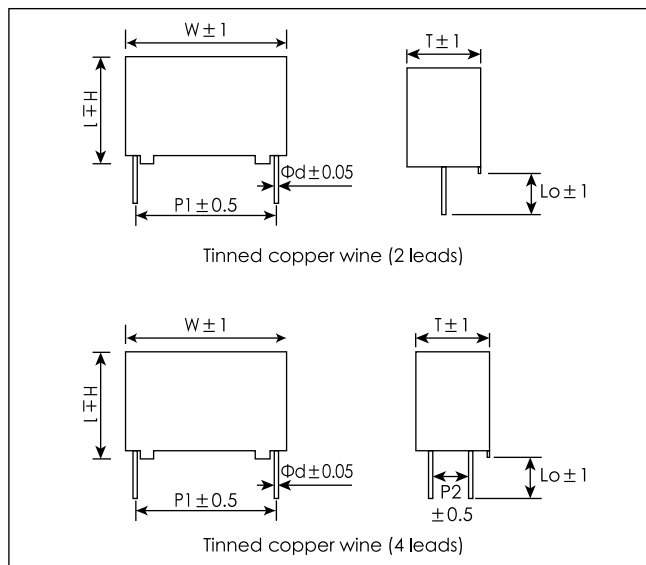
- AC电路输入输出滤波
- 采用聚丙烯薄膜，温度特性好
- 容值稳定，变化率小
- 等效串联电阻小，承受较大的有效值电流
- 有自愈性
- 塑壳封装，阻燃树脂灌封
- 镀锡铜线引出，适合PCB安装

## 应用场合

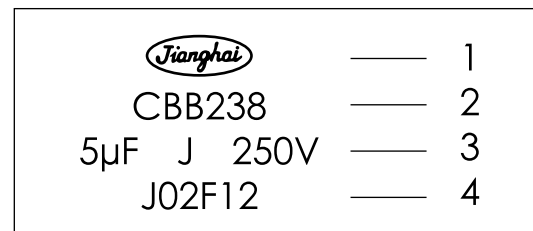
- 太阳能逆变器
- UPS电源
- 电机驱动

## 外形图 Dimensions

Unit: mm



## 标识 Marking



| NO. | 项目 Item  |
|-----|--|
| 1   | 商标 Brand   |
| 2   | 产品系列 Products series                                   |
| 3   | 容量、偏差以及额定电压<br>Capacitance、Tolerance and Rated voltage |
| 4   | 日期代码 Date code   |

## 性能特性 Specifications

| 项目 Item  | 特性 Characteristics   |
|--|--|
| 引用标准<br>Reference Standard                             | GB/T 17702 (IEC 61071)   |
| 气候类别<br>Climatic Category                              | 40/105/56  |
| 工作温度范围<br>Operating Temperature Range                  | -40~+105°C<br>+85°C~+105°C: decreasing factor 1.5% per°C for $U_{rms}$ |
| 存储温度范围<br>Storage Temperature Range                    | -40~+105°C   |
| 额定电压 $U_R$<br>Rated Voltage                            | 160~450V <sub>AC</sub>   |
| 电容量范围<br>Capacitance Range                             | 0.22~50μF  |
| 电容量偏差<br>Capacitance Tolerance                         | ±5%(J), ±10%(K)  |
| 端子与端子电压 $U_{TT}$<br>Voltage Between Terminals          | 2.15 $U_N$ (V <sub>DC</sub> ), 10s (20°C)                              |
| 端子与铝壳电压 $U_{TC}$<br>Voltage Between Terminals and Case | 3000 V <sub>AC</sub> , 10s (20°C, 50Hz)                                |
| 介质损耗角正切<br>Dielectric Dissipation Factor               | 0.0002   |
| 绝缘电阻<br>Insulation Resistance                          | ≥10000MΩ • μF (20°C, 100V <sub>DC</sub> , 1min)                        |
| 预期寿命<br>Life Expectancy                                | 100000 hours ( $U_R$ , $\theta_{hotspot}$ =70°C)                       |
| 失效率<br>Failure Rate                                    | 100 FIT  |

## 规格标准 Standard Ratings

| U <sub>rms</sub> =160V <sub>ac</sub> U <sub>N</sub> =225V <sub>ac</sub> U <sub>NDC</sub> =400V <sub>dc</sub> |                     |                 |                  |                   |        |                |                |      |      |      |      |      |
|--|---------------------|-----------------|------------------|-------------------|--------|----------------|----------------|------|------|------|------|------|
| C <sub>R</sub>   | P/N                 | R <sub>th</sub> | I <sub>max</sub> | I <sub>Peak</sub> | dv/dt  | R <sub>s</sub> | L <sub>s</sub> | W    | H    | T    | P1   | P2   |
| (μF)   | -                   | (K/W)           | 70°C(A)          | (A)               | (V/us) | (mΩ)           | (nH)           | (mm) | (mm) | (mm) | (mm) | (mm) |
| 1  | FCS1GAN105**I42700* | 19.8            | 5                | 32                | 32     | 30.3           | 24             | 32   | 20   | 11   | 27.5 | \    |
| 2.2  | FCS1GAN225**I42700* | 20.0            | 7                | 70.4              | 32     | 15.3           | 24             | 32   | 20   | 11   | 27.5 | \    |
| 3.3  | FCS1GAN335**I72700* | 27.1            | 7                | 105.6             | 32     | 11.3           | 24             | 32   | 22   | 13   | 27.5 | \    |
| 5  | FCS1GAN505**IC2700* | 34.8            | 7                | 160               | 32     | 8.8            | 26             | 32   | 28   | 14   | 27.5 | \    |
| 10   | FCS1GAN106**IF2700* | 45.0            | 7                | 320               | 32     | 6.8            | 26             | 32   | 33   | 18   | 27.5 | \    |
| 10   | FCS1GAN106**F13710* | 14.5            | 12               | 220               | 22     | 7.2            | 30             | 42.5 | 37   | 28   | 37.5 | 10.2 |
| 20   | FCS1GAN206**F13710* | 15.1            | 12               | 440               | 22     | 6.9            | 30             | 42.5 | 37   | 28   | 37.5 | 10.2 |
| 30   | FCS1GAN306**FF3720* | 14.1            | 12               | 660               | 22     | 7.4            | 30             | 42.5 | 45   | 30   | 37.5 | 20.3 |
| 40   | FCS1GAN406**HH5220* | 13.7            | 12               | 640               | 16     | 7.6            | 35             | 57.5 | 45   | 30   | 52.5 | 20.3 |
| 50   | FCS1GAN506**HL5220* | 13.9            | 12               | 800               | 16     | 7.5            | 35             | 57.5 | 50   | 35   | 52.5 | 20.3 |
| U <sub>rms</sub> =250V <sub>ac</sub> U <sub>N</sub> =350V <sub>ac</sub> U <sub>NDC</sub> =475V <sub>dc</sub> |                     |                 |                  |                   |        |                |                |      |      |      |      |      |
| C <sub>R</sub>   | P/N                 | R <sub>th</sub> | I <sub>max</sub> | I <sub>Peak</sub> | dv/dt  | R <sub>s</sub> | L <sub>s</sub> | W    | H    | T    | P1   | P2   |
| (μF)   | -                   | (K/W)           | 70°C(A)          | (A)               | (V/us) | (mΩ)           | (nH)           | (mm) | (mm) | (mm) | (mm) | (mm) |
| 1.5  | FCS2FAN155**I42700* | 23.4            | 8                | 60                | 40     | 10.0           | 24             | 32   | 20   | 11   | 27.5 | \    |
| 2  | FCS2FAN205**I72700* | 22.6            | 9                | 80                | 40     | 8.2            | 24             | 32   | 22   | 13   | 27.5 | \    |
| 3.3  | FCS2FAN335**IC2700* | 29.9            | 9                | 132               | 40     | 6.2            | 26             | 32   | 28   | 14   | 27.5 | \    |
| 5  | FCS2FAN505**IF2700* | 35.6            | 9                | 200               | 40     | 5.2            | 26             | 32   | 33   | 18   | 27.5 | \    |
| 6.8  | FCS2FAN685**I13710* | 15.6            | 14               | 272               | 40     | 4.9            | 28             | 32   | 37   | 22   | 37.5 | 10.2 |
| 10   | FCS2FAN106**F23710* | 13.7            | 14               | 300               | 30     | 5.6            | 30             | 42.5 | 40   | 20   | 37.5 | 10.2 |
| 15   | FCS2FAN156**F13710* | 14.7            | 14               | 450               | 30     | 5.2            | 30             | 42.5 | 37   | 28   | 37.5 | 10.2 |
| 20   | FCS2FAN206**FF3720* | 15.9            | 14               | 600               | 30     | 4.8            | 30             | 42.5 | 45   | 30   | 37.5 | 20.3 |
| 25   | FCS2FAN256**HH5220* | 13.4            | 14               | 625               | 25     | 5.7            | 35             | 57.5 | 45   | 30   | 52.5 | 20.3 |
| 30   | FCS2FAN306**HH5220* | 14.4            | 14               | 750               | 25     | 5.3            | 35             | 57.5 | 45   | 30   | 52.5 | 20.3 |
| 35   | FCS2FAN356**HL5220* | 13.9            | 14               | 875               | 25     | 5.5            | 35             | 57.5 | 50   | 35   | 52.5 | 20.3 |
| 40   | FCS2FAN406**HL5220* | 14.7            | 14               | 1000              | 25     | 5.2            | 35             | 57.5 | 50   | 35   | 52.5 | 20.3 |
| U <sub>rms</sub> =275V <sub>ac</sub> U <sub>N</sub> =385V <sub>ac</sub> U <sub>NDC</sub> =520V <sub>dc</sub> |                     |                 |                  |                   |        |                |                |      |      |      |      |      |
| C <sub>R</sub>   | P/N                 | R <sub>th</sub> | I <sub>max</sub> | I <sub>Peak</sub> | dv/dt  | R <sub>s</sub> | L <sub>s</sub> | W    | H    | T    | P1   | P2   |
| (μF)   | -                   | (K/W)           | 70°C(A)          | (A)               | (V/us) | (mΩ)           | (nH)           | (mm) | (mm) | (mm) | (mm) | (mm) |
| 3.3  | FCS2HAN335**IF2700* | 29.9            | 9                | 132               | 40     | 6.2            | 26             | 32   | 33   | 18   | 27.5 | \    |
| 6.8  | FCS2HAN685**I13710* | 39.4            | 9                | 272               | 40     | 4.7            | 28             | 32   | 37   | 22   | 27.5 | \    |
| 10   | FCS2HAN106**F23710* | 13              | 14               | 300               | 30     | 5.9            | 30             | 42.5 | 40   | 20   | 37.5 | 10.2 |
| 15   | FCS2HAN156**FF3720* | 15              | 14               | 450               | 30     | 5.1            | 30             | 42.5 | 45   | 30   | 37.5 | 20.3 |
| 20   | FCS2HAN206**HH3720* | 12.8            | 14               | 500               | 25     | 6.0            | 35             | 57.5 | 45   | 30   | 52.5 | 20.3 |
| 30   | FCS2HAN306**HL5220* | 14.4            | 14               | 750               | 25     | 5.3            | 35             | 57.5 | 50   | 35   | 52.5 | 20.3 |
| U <sub>rms</sub> =350V <sub>ac</sub> U <sub>N</sub> =480V <sub>ac</sub> U <sub>NDC</sub> =600V <sub>dc</sub> |                     |                 |                  |                   |        |                |                |      |      |      |      |      |
| C <sub>R</sub>   | P/N                 | R <sub>th</sub> | I <sub>max</sub> | I <sub>Peak</sub> | dv/dt  | R <sub>s</sub> | L <sub>s</sub> | W    | H    | T    | P1   | P2   |
| (μF)   | -                   | (K/W)           | 70°C(A)          | (A)               | (V/us) | (mΩ)           | (nH)           | (mm) | (mm) | (mm) | (mm) | (mm) |
| 1  | FCS3FAN105**I72700* | 17              | 9                | 45                | 45     | 10.9           | 24             | 32   | 22   | 13   | 27.5 | \    |
| 2  | FCS3FAN205**IF2700* | 25.4            | 9                | 90                | 45     | 7.3            | 26             | 32   | 33   | 18   | 27.5 | \    |
| 2.2  | FCS3FAN225**IF2700* | 26.8            | 9                | 99                | 45     | 6.9            | 26             | 32   | 33   | 18   | 27.5 | \    |
| 3.3  | FCS3FAN335**I13710* | 32.5            | 9                | 148.5             | 45     | 5.7            | 28             | 32   | 37   | 22   | 27.5 | \    |
| 4.7  | FCS3FAN475**F23710* | 11.1            | 14               | 159.8             | 34     | 6.9            | 30             | 42.5 | 40   | 20   | 37.5 | 10.2 |
| 5  | FCS3FAN505**F23710* | 11.3            | 14               | 170               | 34     | 6.8            | 30             | 42.5 | 40   | 20   | 37.5 | 10.2 |
| 6.8  | FCS3FAN685**F13710* | 12.3            | 14               | 231.2             | 34     | 6.2            | 30             | 42.5 | 37   | 28   | 37.5 | 10.2 |
| 10   | FCS3FAN106**FF3720* | 14.4            | 14               | 340               | 34     | 5.3            | 30             | 42.5 | 45   | 30   | 37.5 | 20.3 |
| 12   | FCS3FAN126**HH5220* | 11.3            | 14               | 336               | 28     | 6.8            | 35             | 57.5 | 45   | 30   | 52.5 | 20.3 |
| 20   | FCS3FAN206**HL5220* | 13              | 14               | 560               | 28     | 5.9            | 35             | 57.5 | 50   | 35   | 52.5 | 20.3 |

FILM

## 规格标准 Standard Ratings

| U <sub>rms</sub> =400V <sub>ac</sub> , U <sub>N</sub> =560V <sub>ac</sub> , U <sub>NDC</sub> =700V <sub>dc</sub> |                     |                 |                  |                   |        |                |                |      |      |      |      |      |
|--|---------------------|-----------------|------------------|-------------------|--------|----------------|----------------|------|------|------|------|------|
| C <sub>R</sub>   | P/N                 | R <sub>th</sub> | I <sub>max</sub> | I <sub>Peak</sub> | dv/dt  | R <sub>S</sub> | L <sub>S</sub> | W    | H    | T    | P1   | P2   |
| (μF)   | -                   | (K/W)           | 70°C(A)          | (A)               | (V/us) | (mΩ)           | (nH)           | (mm) | (mm) | (mm) | (mm) | (mm) |
| 1  | FCS4AAN105**IC2700* | 18              | 9                | 50                | 50     | 10.3           | 26             | 32   | 28   | 14   | 27.5 | \    |
| 1.5  | FCS4AAN155**IF2700* | 22.9            | 9                | 75                | 50     | 8.1            | 26             | 32   | 33   | 18   | 27.5 | \    |
| 2.2  | FCS4AAN225**IF2700* | 28.9            | 9                | 110               | 50     | 6.4            | 26             | 32   | 33   | 18   | 27.5 | \    |
| 3  | FCS4AAN305**II3710* | 32.5            | 9                | 150               | 50     | 5.7            | 28             | 32   | 37   | 22   | 27.5 | \    |
| 5  | FCS4AAN505**F13710* | 12.3            | 14               | 200               | 40     | 6.2            | 30             | 42.5 | 37   | 28   | 37.5 | 10.2 |
| 10   | FCS4AAN106**HH5220* | 11.1            | 14               | 350               | 35     | 6.9            | 35             | 57.5 | 45   | 30   | 52.5 | 20.3 |
| 15   | FCS4AAN156**HL5220* | 12.5            | 14               | 525               | 35     | 6.1            | 35             | 57.5 | 50   | 35   | 52.5 | 20.3 |

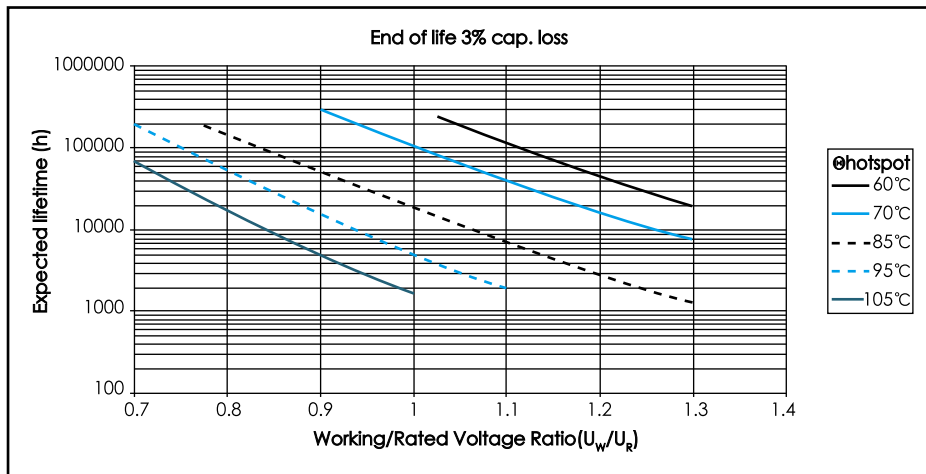
| U <sub>rms</sub> =450V <sub>ac</sub> , U <sub>N</sub> =630V <sub>ac</sub> , U <sub>NDC</sub> =750V <sub>dc</sub> |                     |                 |                  |                   |        |                |                |      |      |      |      |      |
|--|---------------------|-----------------|------------------|-------------------|--------|----------------|----------------|------|------|------|------|------|
| C <sub>R</sub>   | P/N                 | R <sub>th</sub> | I <sub>max</sub> | I <sub>Peak</sub> | dv/dt  | R <sub>S</sub> | L <sub>S</sub> | W    | H    | T    | P1   | P2   |
| (μF)   | -                   | (K/W)           | 70°C(A)          | (A)               | (V/us) | (mΩ)           | (nH)           | (mm) | (mm) | (mm) | (mm) | (mm) |
| 0.47   | FCS4FAN474**I72700* | 14.9            | 8                | 25.85             | 55     | 15.7           | 24             | 32   | 22   | 13   | 27.5 | \    |
| 1  | FCS4FAN105**IF2700* | 25.5            | 8                | 55                | 55     | 9.2            | 26             | 32   | 33   | 18   | 27.5 | \    |
| 1.5  | FCS4FAN155**II3710* | 32.1            | 8                | 82.5              | 55     | 7.3            | 28             | 32   | 37   | 22   | 27.5 | \    |
| 3.3  | FCS4FAN335**F13710* | 10.3            | 14               | 148.5             | 45     | 7.4            | 30             | 42.5 | 37   | 28   | 37.5 | 10.2 |
| 4.7  | FCS4FAN475**FF3720* | 12.3            | 14               | 211.5             | 45     | 6.2            | 30             | 42.5 | 45   | 30   | 37.5 | 20.3 |
| 6.8  | FCS4FAN685**HH5220* | 10.2            | 14               | 258.4             | 38     | 7.5            | 35             | 57.5 | 45   | 30   | 52.5 | 20.3 |
| 10   | FCS4FAN106**HL5220* | 11.6            | 14               | 380               | 38     | 6.6            | 35             | 57.5 | 50   | 35   | 52.5 | 20.3 |

\* R<sub>th</sub> 为产品热点到环境的热阻（自然冷却）

\* The thermal Resistance from hotspot to ambient environment (Natural cooling)

可根据客户要求定制。Customer products are available on request.

## 预期寿命曲线 Expected lifetime curve



## 警告 Cautions and warnings

■ Don't exceed the upper category temperature.

电容器的使用不能超过上限温度。

■ For longtime storage, maximum relative humidity 80%, no dew allowed on the capacitor.

电容器的长期存储，其最大相对湿度是80%，且在上面不允许沾有水。

■ Do not use or store capacitor in corrosive atmosphere, in the dusty environments regular maintenance and cleaning especially of the terminals is required to avoid conductive path between terminal / or terminal and ground.

电容器不能在或存储在腐蚀性环境。在多灰尘的环境里，要求定期维护和清洁，特别是电极端子，以避免相与相间或相与地之间有导电通路。

■ Don't apply any mechanical stress to the capacitor terminals, and avoid any compressive, tensile or flexural stress.

不要将任何机械应力施加到电容器的端子上，且要避免任何压缩，拉伸或弯曲应力。

■ Avoid overload of the capacitors.

电容器不能超负荷使用。

■ Do not have unlimited service life expectancy, the max service life expectancy may vary depending on the application the capacitor is used in.

电容器的寿命是有限的，最大工作寿命因使用条件的不同而不同。