

Upgrade!

NPCAP™-PSF Series

- Super low ESR, high ripple current capability
- ESR 5mΩ max. (2 & 2.5V<sub>dc</sub>)
- Longer life (5,000 hours at 105°C)
- ESR after endurance is specified within the initial spec (2 & 2.5V<sub>dc</sub>)
- Rated voltage range : 2 to 16V<sub>dc</sub>
- RoHS Compliant
- Halogen Free

PSF  
↑  
Lower ESR  
PSE



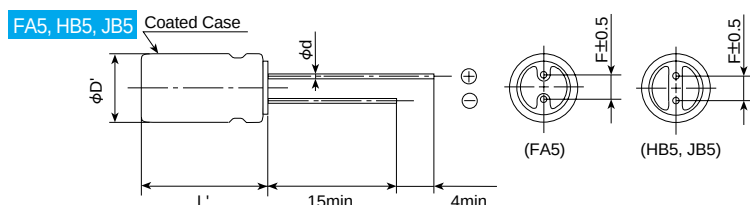
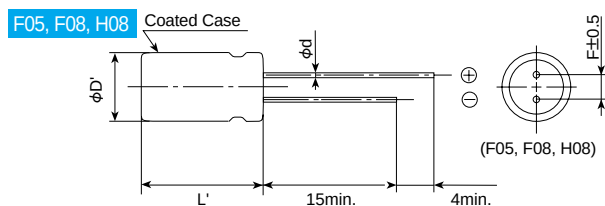
## SPECIFICATIONS

| Items                                                 | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|--------------------|----------------------------|-------------|------------------------------|-----|-------------------------------------------------------------------------------------------------------------------|-----------------|------------------------------|
| Category                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Temperature Range                                     | -55 to +105°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Rated Voltage Range                                   | 2 to 16V <sub>dc</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Capacitance Tolerance                                 | ±20% (M) (at 20°C, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Surge Voltage                                         | Rated voltage(V)×1.15 (at 105°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Leakage Current                                       | I=0.2CV or 500μA, whichever is greater (at 20°C after 2 minutes)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| *Note                                                 | Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Dissipation Factor (tanδ)                             | 0.10 max. (at 20°C, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Low Temperature Characteristics (Max.Impedance Ratio) | Z(-25°C)/Z(+20°C)≤1.15<br>Z(-55°C)/Z(+20°C)≤1.25 (at 100kHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Endurance                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 5,000 hours at 105°C. <table border="1"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤±20% of the initial value</td> </tr> <tr> <td>D.F. (tanδ)</td> <td>≤The initial specified value</td> </tr> <tr> <td>ESR</td> <td>2 &amp; 2.5V<sub>dc</sub> : ≤The initial specified value<br/>16V<sub>dc</sub> : ≤150% of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤The initial specified value</td> </tr> </table>                                                             | Appearance | No significant damage | Capacitance change | ≤±20% of the initial value | D.F. (tanδ) | ≤The initial specified value | ESR | 2 & 2.5V <sub>dc</sub> : ≤The initial specified value<br>16V <sub>dc</sub> : ≤150% of the initial specified value | Leakage current | ≤The initial specified value |
| Appearance                                            | No significant damage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Capacitance change                                    | ≤±20% of the initial value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| D.F. (tanδ)                                           | ≤The initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| ESR                                                   | 2 & 2.5V <sub>dc</sub> : ≤The initial specified value<br>16V <sub>dc</sub> : ≤150% of the initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Leakage current                                       | ≤The initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Bias Humidity Test                                    | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to DC voltage at 60°C, 90 to 95% RH for 1,000 hours. <table border="1"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤±20% of the initial value</td> </tr> <tr> <td>D.F. (tanδ)</td> <td>≤The initial specified value</td> </tr> <tr> <td>ESR</td> <td>2 &amp; 2.5V<sub>dc</sub> : ≤The initial specified value<br/>16V<sub>dc</sub> : ≤150% of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤The initial specified value</td> </tr> </table>                                               | Appearance | No significant damage | Capacitance change | ≤±20% of the initial value | D.F. (tanδ) | ≤The initial specified value | ESR | 2 & 2.5V <sub>dc</sub> : ≤The initial specified value<br>16V <sub>dc</sub> : ≤150% of the initial specified value | Leakage current | ≤The initial specified value |
| Appearance                                            | No significant damage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Capacitance change                                    | ≤±20% of the initial value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| D.F. (tanδ)                                           | ≤The initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| ESR                                                   | 2 & 2.5V <sub>dc</sub> : ≤The initial specified value<br>16V <sub>dc</sub> : ≤150% of the initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Leakage current                                       | ≤The initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Surge Voltage Test                                    | The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltage specified at 105°C for 30 seconds through a protective resistor(R=1kΩ) and discharge for 5 minutes 30 seconds. <table border="1"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤±20% of the initial value</td> </tr> <tr> <td>D.F. (tanδ)</td> <td>≤The initial specified value</td> </tr> <tr> <td>ESR</td> <td>2 &amp; 2.5V<sub>dc</sub> : ≤The initial specified value<br/>16V<sub>dc</sub> : ≤150% of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤The initial specified value</td> </tr> </table> | Appearance | No significant damage | Capacitance change | ≤±20% of the initial value | D.F. (tanδ) | ≤The initial specified value | ESR | 2 & 2.5V <sub>dc</sub> : ≤The initial specified value<br>16V <sub>dc</sub> : ≤150% of the initial specified value | Leakage current | ≤The initial specified value |
| Appearance                                            | No significant damage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Capacitance change                                    | ≤±20% of the initial value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| D.F. (tanδ)                                           | ≤The initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| ESR                                                   | 2 & 2.5V <sub>dc</sub> : ≤The initial specified value<br>16V <sub>dc</sub> : ≤150% of the initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Leakage current                                       | ≤The initial specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |
| Failure Rate                                          | 0.5% per 1,000 hours maximum (Confidence level 60% at 105°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                       |                    |                            |             |                              |     |                                                                                                                   |                 |                              |

\*Note : If any doubt arises, measure the leakage current after the following voltage treatment.  
Voltage treatment : DC rated voltage is applied to the capacitors for 120 minutes at 105°C.

## DIMENSIONS [mm]

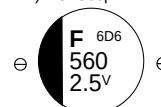
- Terminal Code : E



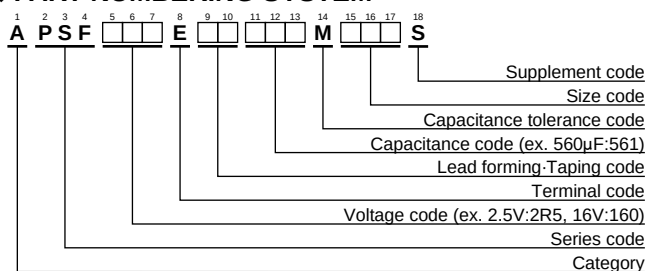
| Size code | F05        | F08 | FA5       | H08       | HB5       | JB5  |
|-----------|------------|-----|-----------|-----------|-----------|------|
| φD        | 6.3        |     |           | 8.0       |           | 10.0 |
| φd        | 0.45       | 0.6 | 0.5       | 0.6       |           |      |
| F         | 2.5        |     |           | 3.5       |           | 5.0  |
| φD'       | φD+0.5max. |     |           |           |           |      |
| L'        | L+1.0max.  |     | L+0.3max. | L+1.0max. | L+1.5max. |      |

## MARKING

EX) 2.5V560μF



# ◆PART NUMBERING SYSTEM



Please refer to "Product code guide (conductive polymer type)"

# ◆STANDARD RATINGS

| WV(Vdc) | Cap(μF) | Case size<br>φD×L(mm) | ESR<br>(mΩ max./20°C, 100k to 300kHz) | Rated ripple current<br>(mA rms/105°C, 100kHz) | Part No.           |
|---------|---------|-----------------------|---------------------------------------|------------------------------------------------|--------------------|
| 2       | 1,000   | 6.3×8                 | 5                                     | 5,900                                          | APSF2R0E□□102MF08S |
| 2.5     | 330     | 6.3×8                 | 5                                     | 5,900                                          | APSF2R5E□□331MF08S |
|         | 470     | 6.3×8                 | 5                                     | 5,900                                          | APSF2R5E□□471MF08S |
|         | 560     | 6.3×8                 | 5                                     | 5,900                                          | APSF2R5E□□561MF08S |
|         | 820     | 6.3×8                 | 5                                     | 5,900                                          | APSF2R5E□□821MF08S |
|         | 1,600   | 8×8                   | 5                                     | 6,100                                          | APSF2R5E□□162MH08S |
| 16      | 100     | 6.3×5                 | 24                                    | 2,490                                          | APSF160E□□101MF05S |
|         | 100     | 6.3×10.5              | 25                                    | 2,820                                          | APSF160E□□101MFA5S |
|         | 270     | 8×8                   | 10                                    | 5,000                                          | APSF160E□□271MH08S |
|         | 270     | 8×11.5                | 11                                    | 5,080                                          | APSF160E□□271MHB5S |
|         | 330     | 8×8                   | 13                                    | 4,700                                          | APSF160E□□331MH08S |
|         | 470     | 8×11.5                | 11                                    | 5,400                                          | APSF160E□□471MHB5S |
|         | 470     | 10×11.5               | 10                                    | 6,100                                          | APSF160E□□471MJB5S |

□□ : Enter the appropriate lead forming or taping code.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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