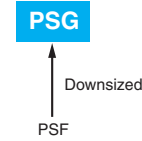


NPCAP™-PSG Series

- Super low ESR, high ripple current capability
- Endurance: 15,000 to 20,000 hours at 105°C
- Rated voltage : 16 to 35V<sub>dc</sub>
- RoHS2 Compliant
- Halogen Free



◆ SPECIFICATIONS

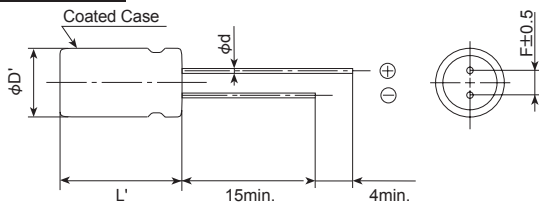
| Items   | Characteristics  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
|---|--|----------------------------------|-----------------------|--------------------|-----------------------------|--------------|---------------------------------------|-----|---------------------------------------|-----------------|-------------------------------|------------|-----------------------|--------------------|-----------------------------|--------------|-------------------------------|-----|---------------------------------------|-----------------|-------------------------------|
| Category  |  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| Temperature Range                                     | -55 to +105°C  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| Rated Voltage   | 16 to 35V <sub>dc</sub>  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| Capacitance Tolerance                                 | ±20% (M) (at 20°C, 120Hz)  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| Leakage Current                                       | I=0.2CV or 500μA, whichever is greater (at 20°C after 2 minutes)<br>*Note Where, I : Leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)   |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| Dissipation Factor (tan δ)                            | 0.12 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 20,000 hours (20 to 35V : 15,000 hours) at 105°C.<br><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. (tan δ)</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>ESR</td><td>≤ 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. (tan δ) | ≤ 150% of the initial specified value | ESR | ≤ 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. (tan δ)  | ≤ 150% of the initial specified value  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| ESR   | ≤ 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.<br><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. (tan δ)</td><td>≤ The initial specified value</td></tr> <tr><td>ESR</td><td>≤ 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. (tan δ) | ≤ The initial specified value         | ESR | ≤ 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. (tan δ)  | ≤ The initial specified value  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| ESR   | ≤ 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.<br><table border="1"> <tr><td>Rated voltage (V<sub>dc</sub>)</td><td>16</td><td>20</td><td>25</td><td>35</td></tr> <tr><td>Surge voltage (V<sub>dc</sub>)</td><td>18</td><td>23</td><td>29</td><td>40</td></tr> </table><br><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. (tan δ)</td><td>≤ The initial specified value</td></tr> <tr><td>ESR</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>Leakage current</td><td>≤ The initial specified value</td></tr> </table> | Rated voltage (V <sub>dc</sub> ) | 16                    | 20                 | 25                          | 35           | Surge voltage (V <sub>dc</sub> )      | 18  | 23                                    | 29              | 40                            | Appearance | No significant damage | Capacitance change | ≤ ±20% of the initial value | D.F. (tan δ) | ≤ The initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value |
| Rated voltage (V <sub>dc</sub> )                      | 16   | 20                               | 25                    | 35                 |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| Surge voltage (V <sub>dc</sub> )                      | 18   | 23                               | 29                    | 40                 |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| Appearance  | No significant damage  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| Capacitance change                                    | ≤ ±20% of the initial value  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| D.F. (tan δ)  | ≤ The initial specified value  |                                  |                       |                    |                             |              |                                       |     |                                       |                 |                               |            |                       |                    |                             |              |                               |     |                                       |                 |                               |
| ESR   | ≤ 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

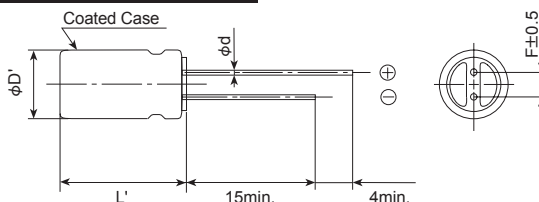
F05, F08, H08



| Size code | F05               | F08 | H08 | HB5       | H16 | H20 | JB5  | J16 | J20 |
|-----------|-------------------|-----|-----|-----------|-----|-----|------|-----|-----|
| φD        | 6.3               |     |     | 8.0       |     |     | 10.0 |     |     |
| φd        | 0.45              |     |     | 0.6       |     |     |      |     |     |
| F         | 2.5               |     |     | 3.5       |     |     | 5.0  |     |     |
| φD'       | φD+0.5max.        |     |     |           |     |     |      |     |     |
| L'        | L+1.0max. (Note1) |     |     | L+1.5max. |     |     |      |     |     |

Note1 : L+1.2 max. for 16V270μF (Rated ripple current 5,080mArms).

HB5, H16, H20, JB5, J16, J20



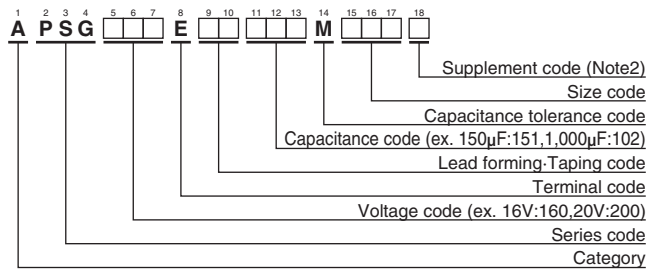
◆ MARKING

EX) 16V150μF



NPCAP™-PSG Series

◆PART NUMBERING SYSTEM



(Note2) : PSG series, 16V270μF (Rated ripple current 5,080mArms) ,16V470μF (Rated ripple current 5,400mArms) ,16V560μF (Rated ripple current 6,100mArms)have supplement code “J”. Terminal and terminal plating are the same as all other in PSG series.

Please refer to “Product code guide (conductive polymer type)”

◆STANDARD RATINGS

| WV (V <sub>dc</sub> ) | Cap (μF) | Case size φ D × L (mm) | ESR (mΩ max./20°C, 100k to 300kHz) | Rated ripple current (mArms/105°C, 100kHz) | Part No.           |
|-----------------------|----------|------------------------|------------------------------------|--|--------------------|
| 16                    | 150      | 6.3 × 5                | 20                                 | 3,200                                      | APSG160E□□151MF05S |
|                       | 270      | 6.3 × 8                | 10                                 | 5,080                                      | APSG160E□□271MF08J |
|                       | 270      | 6.3 × 8                | 15                                 | 3,800                                      | APSG160E□□271MF08S |
|                       | 470      | 8 × 8                  | 8                                  | 5,400                                      | APSG160E□□471MH08J |
|                       | 470      | 8 × 8                  | 16                                 | 4,000                                      | APSG160E□□471MH08S |
|                       | 560      | 8 × 11.5               | 8                                  | 6,100                                      | APSG160E□□561MHB5J |
|                       | 560      | 8 × 11.5               | 14                                 | 4,970                                      | APSG160E□□561MHB5S |
|                       | 820      | 8 × 16                 | 8                                  | 7,000                                      | APSG160E□□821MH16S |
|                       | 820      | 10 × 11.5              | 12                                 | 5,400                                      | APSG160E□□821MJB5S |
|                       | 1,000    | 8 × 20                 | 8                                  | 7,500                                      | APSG160E□□102MH20S |
|                       | 1,000    | 10 × 11.5              | 12                                 | 5,400                                      | APSG160E□□102MJB5S |
|                       | 1,200    | 8 × 20                 | 8                                  | 7,500                                      | APSG160E□□122MH20S |
|                       | 1,500    | 10 × 16                | 8                                  | 7,700                                      | APSG160E□□152MJ16S |
|                       | 1,800    | 10 × 20                | 8                                  | 8,100                                      | APSG160E□□182MJ20S |
| 2,200                 | 10 × 20  | 8                      | 8,100                              | APSG160E□□222MJ20S                         |                    |
| 20                    | 120      | 6.3 × 5                | 20                                 | 3,200                                      | APSG200E□□121MF05S |
|                       | 180      | 6.3 × 8                | 18                                 | 3,460                                      | APSG200E□□181MF08S |
|                       | 330      | 8 × 8                  | 17                                 | 3,880                                      | APSG200E□□331MH08S |
|                       | 390      | 8 × 11.5               | 14                                 | 4,970                                      | APSG200E□□391MHB5S |
|                       | 680      | 10 × 11.5              | 12                                 | 5,400                                      | APSG200E□□681MJB5S |
| 25                    | 56       | 6.3 × 5                | 30                                 | 2,600                                      | APSG250E□□560MF05S |
|                       | 82       | 6.3 × 8                | 28                                 | 2,780                                      | APSG250E□□820MF08S |
|                       | 100      | 6.3 × 8                | 28                                 | 2,780                                      | APSG250E□□101MF08S |
|                       | 120      | 6.3 × 8                | 28                                 | 2,780                                      | APSG250E□□121MF08S |
|                       | 180      | 8 × 8                  | 18                                 | 3,770                                      | APSG250E□□181MH08S |
|                       | 180      | 8 × 11.5               | 16                                 | 4,650                                      | APSG250E□□181MHB5S |
|                       | 220      | 8 × 8                  | 18                                 | 3,770                                      | APSG250E□□221MH08S |
|                       | 220      | 8 × 11.5               | 16                                 | 4,650                                      | APSG250E□□221MHB5S |
|                       | 270      | 8 × 11.5               | 16                                 | 4,650                                      | APSG250E□□271MHB5S |
|                       | 330      | 8 × 11.5               | 16                                 | 4,650                                      | APSG250E□□331MHB5S |
|                       | 330      | 10 × 11.5              | 14                                 | 5,000                                      | APSG250E□□331MJB5S |
|                       | 390      | 10 × 11.5              | 14                                 | 5,000                                      | APSG250E□□391MJB5S |
|                       | 470      | 10 × 11.5              | 14                                 | 5,000                                      | APSG250E□□471MJB5S |
|                       | 560      | 10 × 11.5              | 14                                 | 5,000                                      | APSG250E□□561MJB5S |
| 35                    | 68       | 8 × 11.5               | 18                                 | 4,380                                      | APSG350E□□680MHB5S |
|                       | 120      | 10 × 11.5              | 16                                 | 4,670                                      | APSG350E□□121MJB5S |

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

◆RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

| Frequency (Hz)   | 120  | 1k   | 10k  | 50k  | 100k to 500k |
|------------------|------|------|------|------|--------------|
| Radial lead type | 0.10 | 0.35 | 0.60 | 0.80 | 1.00         |

# Mouser Electronics

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[APSG160ELL102MH20S](#) [APSG160ELL561MHB5J](#) [APSG160ELL821MH16S](#) [APSG160ELL122MH20S](#)  
[APSG160ELL152MJ16S](#) [APSG160ELL182MJ20S](#) [APSG160ELL222MJ20S](#) [APSG200ELL181MF08S](#)  
[APSG200ELL331MH08S](#) [APSG200ELL391MHB5S](#) [APSG250ELL560MF05S](#) [APSG250ELL820MF08S](#)  
[APSG250ELL181MH08S](#) [APSG250ELL181MHB5S](#) [APSG250ELL221MHB5S](#) [APSG250ELL331MJB5S](#)

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
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- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
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## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

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