

**HXW SERIES**
**NEW**
**105°C 2000~3000 hours, Ultra Miniaturized**

• Temperature Range : -40°C~+105°C

 RoHS  
compliance

**◆SPECIFICATIONS**

| Items                      | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |             |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|-----|-----------|---------------------------------------------------------------------------------------|-----------------------------------|---------|-------------|------|-----------|-----------------|--------------------|--------------------------------------------|---|---|----------------|---------|------|-----------------|------------------------------------|--|--|--|---------|---------------------------------------------------------------------------------------|------|------|------|------|
| Category Temperature Range | -40~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |             |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Rated Voltage Range        | 400~500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |             |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Capacitance Tolerance      | ±20% (20℃,120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |             |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Leakage Current(MAX)       | I=3 √CV    (After 5 minutes application of rated voltage)<br>I=Leakage Current(μ A)      C=Capacitance(μ F)      V=Rated Voltage(Vdc)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |             |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Dissipation Factor(MAX)    | <table><tr><td>Rated Voltage (Vdc)</td><td>400</td><td>420~500</td><td colspan="2">(20℃,120Hz)</td></tr><tr><td>tanδ</td><td>0.20</td><td>0.25</td><td colspan="2"></td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |             |     |           | Rated Voltage (Vdc)                                                                   | 400                               | 420~500 | (20℃,120Hz) |      | tanδ      | 0.20            | 0.25               |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Rated Voltage (Vdc)        | 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 420~500 | (20℃,120Hz) |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| tanδ                       | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.25    |             |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Endurance                  | <p>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements.</p> <table><tr><td>Capacitance Change</td><td colspan="4">Within ±20% of the initial value.</td><td>Case Size</td><td>Life Time (hrs)</td></tr><tr><td>Dissipation Factor</td><td colspan="4">Not more than 200% of the specified value.</td><td>φD≤12.5</td><td>2000</td></tr><tr><td>Leakage Current</td><td colspan="4">Not more than the specified value.</td><td>φD≥14.5</td><td><table><tr><td>L≤25</td><td>2000</td></tr><tr><td>L≥30</td><td>3000</td></tr></table></td></tr></table> |         |             |     |           | Capacitance Change                                                                    | Within ±20% of the initial value. |         |             |      | Case Size | Life Time (hrs) | Dissipation Factor | Not more than 200% of the specified value. |   |   |                | φD≤12.5 | 2000 | Leakage Current | Not more than the specified value. |  |  |  | φD≥14.5 | <table><tr><td>L≤25</td><td>2000</td></tr><tr><td>L≥30</td><td>3000</td></tr></table> | L≤25 | 2000 | L≥30 | 3000 |
| Capacitance Change         | Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |             |     | Case Size | Life Time (hrs)                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Dissipation Factor         | Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |             |     | φD≤12.5   | 2000                                                                                  |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Leakage Current            | Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |             |     | φD≥14.5   | <table><tr><td>L≤25</td><td>2000</td></tr><tr><td>L≥30</td><td>3000</td></tr></table> | L≤25                              | 2000    | L≥30        | 3000 |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| L≤25                       | 2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |             |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| L≥30                       | 3000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |             |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Low Temperature Stability  | <table><tr><td>Rated Voltage (Vdc)</td><td>400</td><td>420</td><td>450</td><td>500</td><td rowspan="3">(120Hz)</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>5</td><td>6</td><td>6</td><td>8</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>6</td><td>10</td><td>10</td><td>12</td></tr></table>                                                                                                                                                                                                                                                                                                                                                       |         |             |     |           | Rated Voltage (Vdc)                                                                   | 400                               | 420     | 450         | 500  | (120Hz)   | Z(-25℃)/Z(20℃)  | 5                  | 6                                          | 6 | 8 | Z(-40℃)/Z(20℃) | 6       | 10   | 10              | 12                                 |  |  |  |         |                                                                                       |      |      |      |      |
| Rated Voltage (Vdc)        | 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 420     | 450         | 500 | (120Hz)   |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Z(-25℃)/Z(20℃)             | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 6       | 6           | 8   |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Z(-40℃)/Z(20℃)             | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10      | 10          | 12  |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |
| Impedance Ratio(MAX)       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |             |     |           |                                                                                       |                                   |         |             |      |           |                 |                    |                                            |   |   |                |         |      |                 |                                    |  |  |  |         |                                                                                       |      |      |      |      |

**◆MULTIPLIER FOR RIPPLE CURRENT**

|                |        |      |      |      |       |
|----------------|--------|------|------|------|-------|
| Frequency (Hz) | 60(50) | 120  | 500  | 1k   | 10k ≤ |
| Coefficient    | 0.80   | 1.00 | 1.25 | 1.40 | 1.50  |

**◆OPTION**

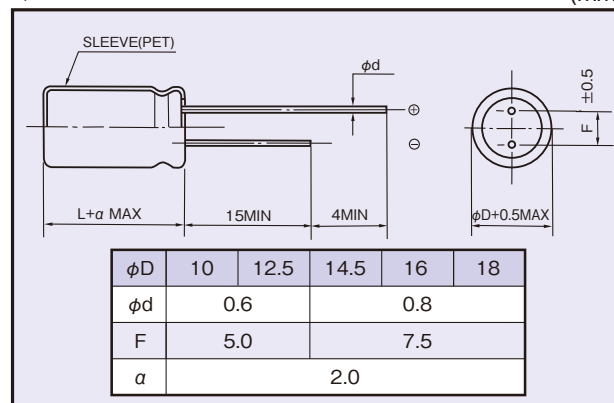
|                         |      |
|-------------------------|------|
| PET Sleeve (-40~+105°C) | Code |
|                         | EFR  |

**◆PART NUMBER**

|               |        |             |                       |        |              |           |
|---------------|--------|-------------|-----------------------|--------|--------------|-----------|
| □□□           | HXW    | □□□□□       | M                     | □□□    | □□           | D×L       |
| Rated Voltage | Series | Capacitance | Capacitance Tolerance | Option | Lead Forming | Case Size |

**◆DIMENSIONS**

(mm)



**◆STANDARD SIZE**

| Rated Voltage (Vdc) | Capacitance (μF) | Size φD×L (mm) | Rated Ripple Current (A r.m.s./105°C,120Hz) |
|---------------------|------------------|----------------|---------------------------------------------|
| 400                 | 39               | 12.5×20        | 0.41                                        |
|                     | 47               | 10×30          | 0.47                                        |
|                     | 56               | 10×35          | 0.54                                        |
|                     | 56               | 10×40          | 0.57                                        |
|                     | 56               | 12.5×25        | 0.53                                        |
|                     | 56               | 14.5×20        | 0.52                                        |
|                     | 68               | 10×45          | 0.65                                        |
|                     | 68               | 12.5×30        | 0.61                                        |
|                     | 68               | 14.5×25        | 0.62                                        |
|                     | 68               | 16×20          | 0.59                                        |
|                     | 82               | 10×50          | 0.73                                        |
|                     | 82               | 10×55          | 0.75                                        |
|                     | 82               | 10×60          | 0.78                                        |
|                     | 82               | 12.5×35        | 0.70                                        |
|                     | 82               | 14.5×30        | 0.71                                        |
|                     | 82               | 18×20          | 0.67                                        |
|                     | 100              | 12.5×40        | 0.80                                        |
|                     | 100              | 12.5×45        | 0.84                                        |
|                     | 100              | 14.5×35        | 0.82                                        |
|                     | 100              | 16×25          | 0.74                                        |
|                     | 120              | 12.5×50        | 0.95                                        |
|                     | 120              | 14.5×40        | 0.93                                        |
|                     | 120              | 16×30          | 0.87                                        |
|                     | 120              | 18×25          | 0.85                                        |
|                     | 150              | 14.5×45        | 1.07                                        |
|                     | 150              | 14.5×50        | 1.11                                        |
|                     | 150              | 16×35          | 1.00                                        |
|                     | 150              | 16×40          | 1.07                                        |
|                     | 150              | 18×30          | 1.00                                        |
|                     | 180              | 16×45          | 1.20                                        |
|                     | 180              | 18×35          | 1.14                                        |
|                     | 220              | 16×50          | 1.34                                        |
|                     | 220              | 18×40          | 1.30                                        |
|                     | 220              | 18×45          | 1.36                                        |
|                     | 270              | 18×50          | 1.53                                        |

| Rated Voltage (Vdc) | Capacitance (μF) | Size φD×L (mm) | Rated Ripple Current (A r.m.s./105°C,120Hz) |
|---------------------|------------------|----------------|---------------------------------------------|
| 420                 | 39               | 10X30          | 0.40                                        |
|                     | 39               | 12.5X20        | 0.38                                        |
|                     | 47               | 10X35          | 0.46                                        |
|                     | 47               | 12.5X25        | 0.45                                        |
|                     | 47               | 14.5X20        | 0.45                                        |
|                     | 56               | 10X40          | 0.52                                        |
|                     | 56               | 16X20          | 0.50                                        |
|                     | 68               | 10X45          | 0.60                                        |
|                     | 68               | 10X50          | 0.62                                        |
|                     | 68               | 12.5X30        | 0.57                                        |
|                     | 68               | 14.5X25        | 0.57                                        |
|                     | 82               | 10X55          | 0.70                                        |
|                     | 82               | 10X60          | 0.71                                        |
|                     | 82               | 12.5X35        | 0.64                                        |
|                     | 82               | 12.5X40        | 0.68                                        |
|                     | 82               | 14.5X30        | 0.66                                        |
|                     | 82               | 16X25          | 0.64                                        |
|                     | 82               | 18X20          | 0.62                                        |
|                     | 100              | 12.5X45        | 0.78                                        |
|                     | 100              | 14.5X35        | 0.76                                        |
|                     | 100              | 16X30          | 0.75                                        |
|                     | 120              | 12.5X50        | 0.86                                        |
|                     | 120              | 14.5X40        | 0.86                                        |
|                     | 120              | 14.5X45        | 0.90                                        |
|                     | 120              | 16X35          | 0.85                                        |
|                     | 120              | 18X25          | 0.78                                        |
|                     | 150              | 14.5X50        | 1.03                                        |
|                     | 150              | 16X40          | 0.99                                        |
|                     | 150              | 18X30          | 0.92                                        |
|                     | 180              | 16X45          | 1.11                                        |
|                     | 180              | 16X50          | 1.15                                        |
|                     | 180              | 18X35          | 1.05                                        |
|                     | 180              | 18X40          | 1.11                                        |
|                     | 220              | 18X45          | 1.26                                        |
|                     | 270              | 18X50          | 1.40                                        |

**◆STANDARD SIZE**

| Rated Voltage (Vdc) | Capacitance (μF) | Size φD×L (mm) | Rated Ripple Current (A r.m.s./105°C,120Hz) |
|---------------------|------------------|----------------|---------------------------------------------|
| 450                 | 33               | 12.5×20        | 0.36                                        |
|                     | 39               | 10×30          | 0.40                                        |
|                     | 47               | 10×35          | 0.46                                        |
|                     | 47               | 12.5×25        | 0.45                                        |
|                     | 47               | 14.5×20        | 0.44                                        |
|                     | 56               | 10×40          | 0.51                                        |
|                     | 56               | 10×45          | 0.55                                        |
|                     | 56               | 12.5×30        | 0.52                                        |
|                     | 56               | 14.5×25        | 0.52                                        |
|                     | 56               | 16×20          | 0.50                                        |
|                     | 68               | 10×50          | 0.62                                        |
|                     | 68               | 10×55          | 0.64                                        |
|                     | 68               | 12.5×35        | 0.60                                        |
|                     | 68               | 18×20          | 0.57                                        |
|                     | 82               | 10×60          | 0.71                                        |
|                     | 82               | 12.5×40        | 0.68                                        |
|                     | 82               | 12.5×45        | 0.71                                        |
|                     | 82               | 14.5×30        | 0.66                                        |
|                     | 82               | 16×25          | 0.64                                        |
|                     | 100              | 12.5×50        | 0.81                                        |
|                     | 100              | 14.5×35        | 0.75                                        |
|                     | 100              | 14.5×40        | 0.79                                        |
|                     | 100              | 16×30          | 0.75                                        |
|                     | 100              | 18×25          | 0.73                                        |
|                     | 120              | 14.5×45        | 0.90                                        |
|                     | 120              | 14.5×50        | 0.93                                        |
|                     | 120              | 16×35          | 0.86                                        |
|                     | 120              | 18×30          | 0.84                                        |
|                     | 150              | 16×40          | 0.97                                        |
|                     | 150              | 16×45          | 1.03                                        |
|                     | 150              | 18×35          | 0.98                                        |
|                     | 180              | 16×50          | 1.15                                        |
|                     | 180              | 18×40          | 1.11                                        |
|                     | 220              | 18×45          | 1.24                                        |
|                     | 220              | 18×50          | 1.30                                        |

| Rated Voltage (Vdc) | Capacitance (μF) | Size φD×L (mm) | Rated Ripple Current (A r.m.s./105°C,120Hz) |
|---------------------|------------------|----------------|---------------------------------------------|
| 500                 | 15               | 12.5×20        | 0.26                                        |
|                     | 22               | 12.5×25        | 0.33                                        |
|                     | 22               | 14.5×20        | 0.33                                        |
|                     | 27               | 12.5×30        | 0.38                                        |
|                     | 27               | 14.5×25        | 0.38                                        |
|                     | 27               | 16×20          | 0.37                                        |
|                     | 33               | 12.5×35        | 0.44                                        |
|                     | 39               | 12.5×40        | 0.50                                        |
|                     | 39               | 14.5×30        | 0.48                                        |
|                     | 39               | 16×25          | 0.48                                        |
|                     | 39               | 18×20          | 0.45                                        |
|                     | 47               | 12.5×45        | 0.57                                        |
|                     | 47               | 12.5×50        | 0.58                                        |
|                     | 47               | 14.5×35        | 0.56                                        |
|                     | 47               | 16×30          | 0.55                                        |
|                     | 47               | 18×25          | 0.54                                        |
|                     | 56               | 14.5×40        | 0.63                                        |
|                     | 56               | 16×35          | 0.62                                        |
|                     | 68               | 14.5×45        | 0.71                                        |
|                     | 68               | 14.5×50        | 0.74                                        |
|                     | 68               | 16×40          | 0.71                                        |
|                     | 68               | 18×30          | 0.68                                        |
|                     | 82               | 16×45          | 0.81                                        |
|                     | 82               | 16×50          | 0.83                                        |
|                     | 82               | 18×35          | 0.78                                        |
|                     | 100              | 18×40          | 0.88                                        |
|                     | 100              | 18×45          | 0.92                                        |
|                     | 100              | 18×50          | 0.95                                        |

# Mouser Electronics

Authorized Distributor

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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;
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- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- 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;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## 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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