

**VXS SERIES**

105°C 5000hours, Charge-Discharge Facility, Snap-in Terminal Type

◆ **FEATURES**

- Load Life : 105°C 5000 hours.
- Specified the endurance of 100million times Charge-Discharge load.
- RoHS compliance.



◆ **SPECIFICATIONS**

| Items   | Characteristics   |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
|---|---|--------------------|-----------------------------------|--------------------|--|----------------------------|------------------------------------|-----------------------------|------------------------------|--------------------|-----------------------------------|--------------------|--|-----------------|------------------------------------|
| Category Temperature Range                      | -25~+105°C  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Rated Voltage Range                             | 315~450V.DC   |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Capacitance Tolerance                           | ±20%(20°C,120Hz)  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Leakage Current(MAX)                            | $I=3\sqrt{CV}$ (After 5 minutes application of rated voltage)<br>$I=(\mu A)$ Leakage Current $C=(\mu F)$ Rated Capacitance $V=(V)$ Rated Voltage  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| (tanδ) Dissipation Factor(MAX)                  | <table border="1"> <tr> <td>Rated Voltage</td> <td>315~450</td> <td rowspan="2">(20°C,120Hz)</td> </tr> <tr> <td>tanδ</td> <td>0.20</td> </tr> </table>   | Rated Voltage      | 315~450                           | (20°C,120Hz)       | tanδ                                       | 0.20                       |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Rated Voltage                                   | 315~450   | (20°C,120Hz)       |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| tanδ  | 0.20  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Charge-Discharge endurance                      | <p>After applying the following charge discharge load for 100million times , the capacitors shall meet the following requirements.</p> <table border="1"> <tr> <td>Charge voltage</td> <td>VR[V]<br/>Rated voltage</td> </tr> <tr> <td>Discharge voltage</td> <td>150V:VR-150 [V]<br/>Rated Voltage</td> </tr> <tr> <td>Charge-Discharge frequency</td> <td>Refer to Standard Size table</td> </tr> <tr> <td>Charge-Discharge Resistance</td> <td>Refer to Standard Size table</td> </tr> </table> <table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±20% of the initial value.</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified value.</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value.</td> </tr> </table> | Charge voltage     | VR[V]<br>Rated voltage            | Discharge voltage  | 150V:VR-150 [V]<br>Rated Voltage           | Charge-Discharge frequency | Refer to Standard Size table       | Charge-Discharge Resistance | Refer to Standard Size table | Capacitance Change | Within ±20% of the initial value. | Dissipation Factor | Not more than 200% of the specified value. | Leakage Current | Not more than the specified value. |
| Charge voltage                                  | VR[V]<br>Rated voltage  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Discharge voltage                               | 150V:VR-150 [V]<br>Rated Voltage  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Charge-Discharge frequency                      | Refer to Standard Size table  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Charge-Discharge Resistance                     | Refer to Standard Size table  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Capacitance Change                              | Within ±20% of the initial value.   |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Dissipation Factor                              | Not more than 200% of the specified value.  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Leakage Current                                 | Not more than the specified value.  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Endurance                                       | <p>After applying rated voltage with rated ripple current for 5000 hours at 105°C, the capacitors shall meet the following requirements.</p> <table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±20% of the initial value.</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified value.</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value.</td> </tr> </table>   | Capacitance Change | Within ±20% of the initial value. | Dissipation Factor | Not more than 200% of the specified value. | Leakage Current            | Not more than the specified value. |                             |                              |                    |                                   |                    |  |                 |                                    |
| Capacitance Change                              | Within ±20% of the initial value.   |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Dissipation Factor                              | Not more than 200% of the specified value.  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Leakage Current                                 | Not more than the specified value.  |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Low Temperature Stability Impedance Ration(MAX) | <table border="1"> <tr> <td>Rated Voltage</td> <td>315~450</td> <td rowspan="2">(120Hz)</td> </tr> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>8</td> </tr> </table>   | Rated Voltage      | 315~450                           | (120Hz)            | Z(-25°C)/Z(20°C)                           | 8                          |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Rated Voltage                                   | 315~450   | (120Hz)            |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |
| Z(-25°C)/Z(20°C)                                | 8   |                    |                                   |                    |  |                            |                                    |                             |                              |                    |                                   |                    |  |                 |                                    |

◆ **MULTIPLIER FOR RIPPLE CURRENT**

Frequency Coefficient

| (Hz) Frequency | 60   | 120  | 300  | 500  | 1k   | 10k≤ |
|----------------|------|------|------|------|------|------|
| Coefficient    | 0.80 | 1.00 | 1.16 | 1.20 | 1.30 | 1.40 |

◆ **OPTION**

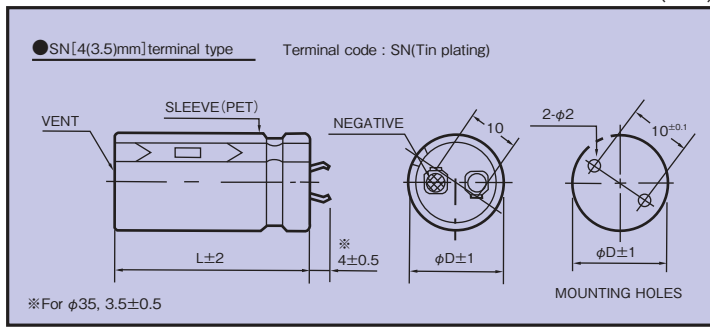
|                          | Code |
|--------------------------|------|
| PET sleeve without plate | EFC  |

◆ **PART NUMBER**

□□□ / VXS / □□□ / M / □□□ / SN / □□□ / DxL  
 Rated Voltage      Series      Rated Capacitance      Capacitance Tolerance      Option      Terminal Code      Case Size

◆ DIMENSIONS

(mm)



◆ STANDARD SIZE

| WV<br>Cap(μF) φD | 315                |                    |                   |                   | 350                |                    |                    |                    |
|------------------|--------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
|                  | φ22                | φ25                | φ30               | φ35               | φ22                | φ25                | φ30                | φ35                |
| 120              |                    |                    |                   |                   | 22x25;0.74; 46; 10 |                    |                    |                    |
| 150              | 22x25;0.82; 46; 10 |                    |                   |                   | 22x30;0.89; 41; 10 | 25x25;0.85; 51; 10 |                    |                    |
| 180              | 22x30;0.95; 41; 10 |                    |                   |                   | 22x35;1.02; 37; 10 | 25x30;0.99; 38; 10 |                    |                    |
| 220              | 22x35;1.11; 37; 10 | 25x25;0.98; 43; 10 |                   |                   | 22x40;1.17; 34; 10 | 25x30;1.08; 38; 10 | 30x25;1.12; 38; 10 |                    |
| 270              | 22x40;1.28; 34; 10 | 25x30;1.17; 38; 9  | 30x25;1.22; 38; 9 |                   | 22x45;1.34; 32; 10 | 25x35;1.25; 35; 10 | 30x30;1.34; 42; 8  | 35x25;1.29; 36; 10 |
| 330              | 22x45;1.45; 32; 9  | 25x35;1.35; 35; 8  | 30x30;1.44; 34; 7 |                   |                    | 25x40;1.43; 32; 9  | 30x35;1.53; 31; 8  | 35x30;1.51; 32; 8  |
| 390              | 22x50;1.62; 30; 8  | 25x40;1.53; 32; 7  | 30x30;1.55; 34; 6 | 35x25;1.5; 35; 7  |                    | 25x45;1.61; 30; 8  | 30x35;1.65; 31; 7  | 35x30;1.58; 32; 8  |
| 470              |                    | 25x45;1.73; 30; 7  | 30x35;1.78; 31; 6 | 35x30;1.67; 31; 6 |                    |                    | 30x40;2.06; 29; 6  | 35x35;1.87; 29; 7  |
| 560              |                    | 25x50;1.99; 28; 6  | 30x40;2.21; 29; 5 | 35x35;2.0; 29; 6  |                    |                    | 30x45;2.11; 27; 6  | 35x40;2.11; 27; 6  |
| 680              |                    |                    | 30x45;2.29; 27; 4 | 35x40;2.49; 27; 4 |                    |                    |                    | 35x45;2.40; 25; 5  |
| 820              |                    |                    | 30x50;2.66; 26; 4 | 35x45;2.59; 25; 4 |                    |                    |                    | 35x50;2.69; 24; 5  |
| 1000             |                    |                    |                   | 35x50;2.92; 24; 4 |                    |                    |                    |                    |

| WV<br>Cap(μF) φD | 385                |                    |                    |                    | 400                |                    |                    |                    |
|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                  | φ22                | φ25                | φ30                | φ35                | φ22                | φ25                | φ30                | φ35                |
| 100              | 22x25;0.67; 46; 10 |                    |                    |                    | 22x25;0.67; 46; 10 |                    |                    |                    |
| 120              | 22x30;0.78; 41; 10 |                    |                    |                    | 22x30;0.79; 41; 10 | 25x25;0.76; 42; 10 |                    |                    |
| 150              | 22x35;0.92; 37; 10 | 25x25;0.83; 43; 10 |                    |                    | 22x35;0.92; 37; 10 | 25x30;0.91; 38; 10 |                    |                    |
| 180              | 22x40;1.05; 34; 10 | 25x30;0.97; 38; 10 | 30x25;1.00; 38; 10 |                    | 22x40;1.05; 34; 10 | 25x30;0.97; 38; 10 | 30x25;1.00; 38; 10 |                    |
| 220              | 22x45;1.19; 32; 10 | 25x35;1.13; 35; 10 | 30x30;1.17; 34; 10 | 35x25;1.17; 43; 10 | 22x45;1.20; 32; 10 | 25x35;1.13; 35; 10 | 30x30;1.20; 34; 10 | 35x25;1.15; 35; 10 |
| 270              | 22x50;1.36; 30; 10 | 25x40;1.29; 32; 10 | 30x30;1.29; 34; 9  | 35x30;1.34; 32; 10 |                    | 25x40;1.30; 32; 10 | 30x35;1.36; 31; 9  | 35x30;1.35; 32; 10 |
| 330              |                    | 25x45;1.47; 30; 10 | 30x35;1.49; 31; 8  | 35x30;1.44; 32; 9  |                    | 25x50;1.54; 28; 10 | 30x35;1.50; 31; 8  | 35x30;1.48; 32; 9  |
| 390              |                    |                    | 30x40;1.83; 29; 7  | 35x35;1.68; 29; 8  |                    |                    | 30x40;1.85; 29; 8  | 35x35;1.68; 29; 8  |
| 470              |                    |                    | 30x45;1.90; 27; 7  | 35x40;1.94; 27; 7  |                    |                    | 30x50;1.98; 26; 8  | 35x40;1.92; 27; 7  |
| 560              |                    |                    | 30x50;2.00; 26; 6  | 35x45;2.14; 25; 7  |                    |                    |                    | 35x45;2.15; 25; 7  |
| 680              |                    |                    |                    | 35x50;2.42; 24; 6  |                    |                    |                    | 35x50;2.43; 24; 6  |

| WV<br>Cap(μF) φD | 420                |                    |                    |                    | 450                |                    |                    |                    |
|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                  | φ22                | φ25                | φ30                | φ35                | φ22                | φ25                | φ30                | φ35                |
| 82               | 22x25;0.60; 46; 10 |                    |                    |                    | 22x25;0.61; 46; 10 |                    |                    |                    |
| 100              | 22x30;0.71; 41; 10 |                    |                    |                    | 22x30;0.72; 41; 10 |                    |                    |                    |
| 120              | 22x30;0.77; 41; 10 | 25x25;0.74; 42; 10 |                    |                    | 22x35;0.82; 37; 10 | 25x25;0.75; 42; 10 |                    |                    |
| 150              | 22x35;0.90; 37; 10 | 25x30;0.89; 38; 10 |                    |                    | 22x40;0.96; 34; 10 | 25x30;0.89; 38; 10 | 30x25;0.91; 38; 10 |                    |
| 180              | 22x40;1.03; 34; 10 | 25x35;1.01; 35; 10 | 30x25;0.98; 38; 10 |                    | 22x45;1.08; 32; 10 | 25x35;1.03; 35; 10 | 30x30;1.06; 34; 10 | 35x25;1.04; 35; 10 |
| 220              | 22x50;1.22; 30; 10 | 25x35;1.10; 35; 10 | 30x30;1.15; 34; 10 | 35x25;1.13; 35; 10 | 22x50;1.14; 30; 10 | 25x40;1.18; 32; 10 | 30x30;1.17; 34; 10 | 35x30;1.21; 32; 10 |
| 270              |                    | 25x45;1.33; 30; 10 | 30x35;1.33; 31; 10 | 35x30;1.35; 32; 10 |                    | 25x45;1.34; 30; 10 | 30x35;1.35; 31; 10 | 35x30;1.34; 32; 10 |
| 330              |                    | 25x50;1.50; 28; 10 | 30x40;1.53; 29; 10 | 35x35;1.53; 29; 10 |                    |                    | 30x40;1.55; 29; 10 | 35x35;1.55; 29; 10 |
| 390              |                    |                    | 30x45;1.72; 27; 9  | 35x35;1.65; 29; 8  |                    |                    | 30x50;1.80; 32; 9  | 35x40;1.75; 27; 9  |
| 470              |                    |                    | 30x50;1.93; 26; 8  | 35x40;1.88; 27; 7  |                    |                    |                    | 35x45;1.97; 25; 8  |
| 560              |                    |                    |                    | 35x45;2.11; 25; 7  |                    |                    |                    | 35x50;2.21; 24; 7  |

