

VKS SERIES CHIP TYPE +105°C(標準品)

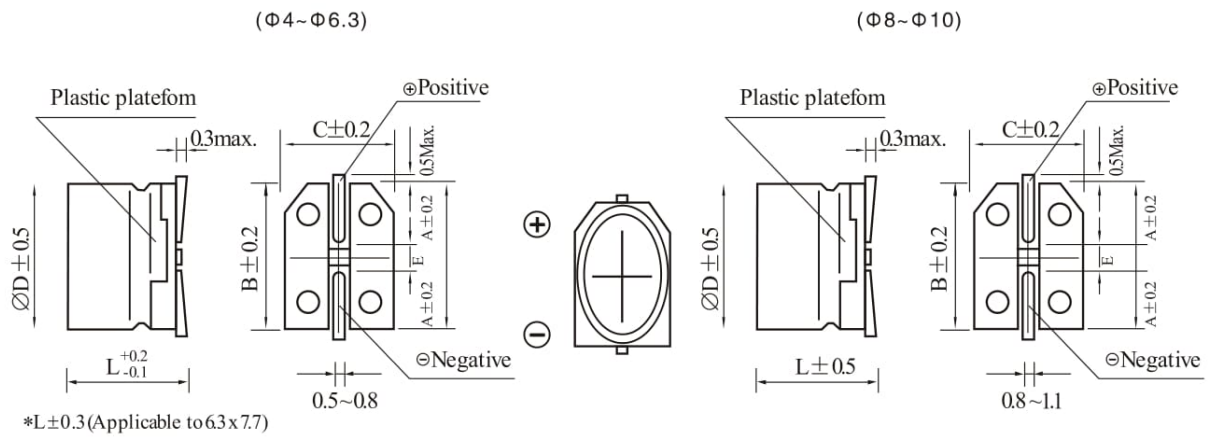
- Case diameter: ϕ 4mm- ϕ 10mm
- Reflow soldering is available
- Available for high density surface mounting
- operating over wide temperature range

◆ SPECIFICATIONS

| Item | Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--------------------|---------------------------------|-----------------------|--|-----------------------|--|---|---|-----|-----|--------------------|---------------|------------|------|------|------|------|------|------|-----|---|---|-----------------|---|---|---|---|---|---|---|---|---|---------------|------------|----|---|---|---|---|---|---|---|---|-----------------|----|----|---|---|---|---|---|---|---|
| Operating temperature range | -40 to +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Working Voltage Range | 4V to 100V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nominal Capacitance Range | 0.1 to 1500 μ F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | \pm 20(120Hz,+20°C) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | $I \leq 0.01CRVR$ or 3 (μ A) whichever is greater after (After 2 minutes'application of rated voltage) CR: nominal capacitance (μ F) is greater measured with rated working voltage applied at +20 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor | <table border="1"> <thead> <tr> <th>Working Voltage(V)</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>tan δ(max)</td> <td>0.35</td> <td>0.28</td> <td>0.24</td> <td>0.18</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> <td>0.1</td> </tr> </tbody> </table> | Working Voltage(V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | tan δ (max) | 0.35 | 0.28 | 0.24 | 0.18 | 0.16 | 0.14 | 0.12 | 0.12 | 0.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Working Voltage(V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tan δ (max) | 0.35 | 0.28 | 0.24 | 0.18 | 0.16 | 0.14 | 0.12 | 0.12 | 0.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low Temperature Characteristics | Impedance ratio max at 120Hz <table border="1"> <thead> <tr> <th colspan="2">Working Voltage(V)</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Z-25°C/Z+20°C</td> <td>< ϕ8</td> <td>7</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>\geq ϕ8</td> <td>7</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td rowspan="2">Z-40°C/Z+20°C</td> <td>< ϕ8</td> <td>15</td> <td>8</td> <td>8</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> <tr> <td>\geq ϕ8</td> <td>15</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table> | Working Voltage(V) | | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | Z-25°C/Z+20°C | < ϕ 8 | 7 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | \geq ϕ 8 | 7 | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | Z-40°C/Z+20°C | < ϕ 8 | 15 | 8 | 8 | 4 | 4 | 3 | 3 | 3 | 3 | \geq ϕ 8 | 15 | 10 | 8 | 6 | 4 | 3 | 3 | 3 | 3 |
| Working Voltage(V) | | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z-25°C/Z+20°C | < ϕ 8 | 7 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | \geq ϕ 8 | 7 | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z-40°C/Z+20°C | < ϕ 8 | 15 | 8 | 8 | 4 | 4 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | \geq ϕ 8 | 15 | 10 | 8 | 6 | 4 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High Temperature Loading | <table border="0"> <tr> <td>Test conditions</td> <td>Post test requirements at +20°C</td> </tr> <tr> <td>Duration : 1000 hours</td> <td>Leakage current : \leq Initial specified value</td> </tr> <tr> <td>Ambient temp : +105°C</td> <td>Cap . Change : \leq \pm20%of Initial measured value</td> </tr> <tr> <td>Applied vlotage:Rated DC working voltage with max,ripple current.</td> <td>tan δ : \leq 200% of Initial specified value</td> </tr> </table> | Test conditions | Post test requirements at +20°C | Duration : 1000 hours | Leakage current : \leq Initial specified value | Ambient temp : +105°C | Cap . Change : \leq \pm 20%of Initial measured value | Applied vlotage:Rated DC working voltage with max,ripple current. | tan δ : \leq 200% of Initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Duration : 1000 hours | Leakage current : \leq Initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ambient temp : +105°C | Cap . Change : \leq \pm 20%of Initial measured value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Shelf Life | <table border="0"> <tr> <td>Test conditions</td> <td>Post test requirements at +20°C</td> </tr> <tr> <td>Duration : 1000 hours</td> <td>Leakage current : \leq 200% of Initial specified value</td> </tr> <tr> <td>Ambient temp : +105°C</td> <td>Cap . Change : \leq \pm30%of Initial measured value</td> </tr> <tr> <td>Applied vlotage:(None)</td> <td>tan δ : \leq 300% of Initial specified value</td> </tr> </table> | Test conditions | Post test requirements at +20°C | Duration : 1000 hours | Leakage current : \leq 200% of Initial specified value | Ambient temp : +105°C | Cap . Change : \leq \pm 30%of Initial measured value | Applied vlotage:(None) | tan δ : \leq 300% of Initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Test conditions | Post test requirements at +20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Duration : 1000 hours | Leakage current : \leq 200% of Initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ambient temp : +105°C | Cap . Change : \leq \pm 30%of Initial measured value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Applied vlotage:(None) | tan δ : \leq 300% of Initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

VKS SERIES CHIP TYPE +105°C(標準品)

◆Dimensions



| ØD×L | 4×5.4 | 5×5.4 | 6.3×5.4 | 6.3×7.7 | 8×10.5 | 10×10.5 |
|------|-------|-------|---------|---------|--------|---------|
| A | 1.8 | 2.1 | 2.4 | 2.4 | 2.9 | 3.2 |
| B | 4.3 | 5.3 | 6.6 | 6.6 | 8.3 | 10.3 |
| C | 4.3 | 5.3 | 6.6 | 6.6 | 8.3 | 10.3 |
| E | 1 | 1.3 | 2.1 | 2.1 | 3.1 | 4.2 |
| L | 5.4 | 5.4 | 5.4 | 7.7 | 10.5 | 10.5 |

Nominal capacitance, rated voltage, rated ripple current and case size table

| Voltage Cap(μF) | 4V | | 6.3V | | 10V | | 16 | |
|--------------------|---------|--------|---------|--------|---------|--------|---------|--------|
| | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 10 | | | | | 4*5.4 | 15 | 5*5.4 | 18 |
| 22 | 4*5.4 | 18 | 4*5.4 | 23 | 4*5.4 | 20 | 4*5.4 | 25 |
| | | | | | 5*5.4 | 27 | 5*5.4 | 31 |
| 33 | 4*5.4 | 23 | 4*5.4 | 25 | 5*5.4 | 34 | 5*5.4 | 35 |
| | | | 5*5.4 | 30 | | | 6.3*5.4 | 41 |
| 47 | 5*5.4 | 42 | 4*5.4 | 28 | 5*5.4 | 36 | 5*5.4 | 39 |
| | | | 5*5.4 | 37 | | | 6.3*5.4 | 41 |
| 100 | 6.3*5.4 | 61 | 5*5.4 | 47 | 6.3*5.4 | 55 | 6.3*5.4 | 70 |
| | | | 6.3*5.4 | 57 | | | 6.3*5.4 | 70 |
| 220 | 6.3*5.4 | 68 | 6.3*5.4 | 74 | 6.3*7.7 | 105 | 6.3*7.7 | 105 |
| | | | 6.3*7.7 | 105 | 8*10.2 | 150 | 8*10.2 | 150 |
| 330 | 6.3*7.7 | 73 | 6.3*7.7 | 105 | 8*10.2 | 196 | 8*10.2 | 170 |
| | | | 8*10.2 | 198 | | | 8*10.2 | 170 |
| 470 | 6.3*7.7 | 105 | 8*10.2 | 210 | 8*10.2 | 200 | 8*10.2 | 230 |
| | | | 10*10.2 | 270 | 8*10.2 | 295 | | |
| 1000 | 8*10.2 | 210 | 8*10.2 | 230 | 10*10.2 | 315 | | |
| 1500 | 8*10.2 | 260 | 10*10.2 | 315 | | | | |

Maximum Allowable Ripple Current (mA rms) at 105°C 120Hz

Case Size ØD X L (mm)

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Nominal capacitance, rated voltage, rated ripple current and case size table

| Voltage Cap(μF) | 25 | | 35 | | 50 | | 63 | |
|--------------------|---------|--------|---------|--------|---------|--------|---------|--------|
| | size | ripple | size | ripple | size | ripple | size | ripple |
| 0.1 | | | | | 4*5.4 | 1 | | |
| 0.22 | | | | | 4*5.4 | 2 | | |
| 0.33 | | | | | 4*5.4 | 3 | | |
| 0.47 | | | | | 4*5.4 | 5 | | |
| 1 | | | | | 4*5.4 | 7 | | |
| 2.2 | | | | | 4*5.4 | 10 | | |
| 3.3 | | | 4*5.4 | 13 | 4*5.4 | 12 | | |
| 4.7 | 4*5.4 | 13 | 4*5.4 | 16 | 5*5.4 | 17 | | |
| 10 | 4*5.4 | 15 | 5*5.4 | 24 | 6.3*5.4 | 26 | 6.3*7.7 | 39 |
| | 5*5.4 | 20 | | | | | | |
| 22 | 5*5.4 | 27 | 6.3*5.4 | 38 | 6.3*7.7 | 51 | 6.3*7.7 | 49 |
| | 6.3*5.4 | 25 | | | | | 8*10.2 | |
| 33 | 6.3*5.4 | 45 | 6.3*5.4 | 42 | 6.3*7.7 | 60 | 6.3*7.7 | 112 |
| | | | | | 8*10.2 | 91 | | |
| 47 | 6.3*7.7 | 60 | 6.3*7.7 | 70 | 6.3*7.7 | 63 | 8*10.2 | 119 |
| | | | | | 8*10.2 | 95 | 10*10.2 | 160 |
| 100 | 6.3*7.7 | 91 | 6.3*7.7 | 84 | 8*10.2 | 110 | 10*10.2 | 196 |
| | | | | 120 | 10*10.2 | 120 | | |
| 220 | 8*10.2 | 180 | 8*10.2 | 170 | 10*10.2 | 175 | | |
| | | | 10*10.2 | 210 | | | | |
| 330 | 8*10.2 | 220 | 10*10.2 | 250 | | | | |
| | 10*10.2 | 240 | | | | | | |
| 470 | 10*10.2 | 280 | 10*10.2 | 275 | | | | |

Maximum Allowable Ripple Current (mA rms) at 105°C 120Hz

Case Size ΦD X L (mm)

Nominal capacitance, rated voltage, rated ripple current and case size table

| Voltage Cap(μF) | 100 | |
|--------------------|---------|--------|
| | size | ripple |
| 4.7 | 6.3*7.7 | 32 |
| 10 | 6.3*7.7 | 35 |
| | 8*10.2 | 77 |
| 22 | 8*10.2 | 85 |
| | 10*10.2 | 125 |
| 33 | 10*10.2 | 133 |
| 47 | 10*10.2 | 140 |

Maximum Allowable Ripple Current (mA rms) at 105°C 120Hz

Case Size ΦD X L (mm)