

GP5 Series

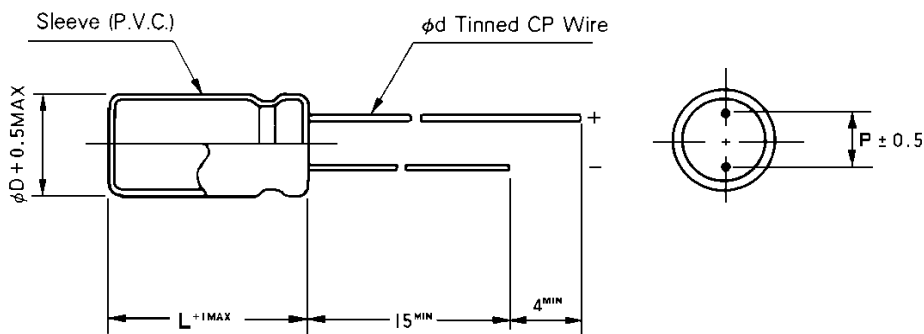


Features

- * Excellent spacing factors with 5mm height
- * Lifetime of 1000 Hrs at 85 °C
- * Available on tape for automatic insertion
- * Solvent proof

| Item | Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-------------------------------|-----|------|------|------|-----|----------------|--------|----------------|---------------------|------|------|-----|------|------|------|-----|--|---------------------|----|---|---|---|---|---|---|--|
| Operating Temperature Range | -40°C to +85°C | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Working Voltage Range | 4 to 50 Volts D.C. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nominal Capacitance Range | 0.1 to 220 uF | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | +/- 20 % (120 Hz, 20°C) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current (+20°C) | $I \leq 0.01 CV$ or 3 uA, whichever is greater after 2 Minutes of applied voltage | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor % (120 Hz, +20°C) | Less than the value below: | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>WVDC</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>120 Hz 20°C</th> </tr> </thead> <tbody> <tr> <td>tan δ (Max)</td> <td>0.35</td> <td>0.24</td> <td>0.2</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.1</td> <td></td> </tr> </tbody> </table> | WVDC | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 120 Hz 20°C | tan δ (Max) | 0.35 | 0.24 | 0.2 | 0.16 | 0.14 | 0.12 | 0.1 | | | | | | | | | | |
| WVDC | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 120 Hz 20°C | | | | | | | | | | | | | | | | | | | | |
| tan δ (Max) | 0.35 | 0.24 | 0.2 | 0.16 | 0.14 | 0.12 | 0.1 | | | | | | | | | | | | | | | | | | | | | |
| Temperature Characteristic | Impedance Ratio | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>WVDC</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>120 Hz</th> </tr> </thead> <tbody> <tr> <td>Z(-25°C) / Z(+20°C)</td> <td>7</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td></td> </tr> <tr> <td>Z(-40°C) / Z(+20°C)</td> <td>15</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td></td> </tr> </tbody> </table> | WVDC | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 120 Hz | Z(-25°C) / Z(+20°C) | 7 | 4 | 3 | 2 | 2 | 2 | 2 | | Z(-40°C) / Z(+20°C) | 15 | 8 | 6 | 4 | 4 | 3 | 3 | |
| | WVDC | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 120 Hz | | | | | | | | | | | | | | | | | | | |
| Z(-25°C) / Z(+20°C) | 7 | 4 | 3 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | |
| Z(-40°C) / Z(+20°C) | 15 | 8 | 6 | 4 | 4 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Load Life | <u>Test conditions</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Duration: | 1000 Hrs | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ambient temperature: | +85°C | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Applied voltage: | Rated working voltage | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ripple Current: | Maximum rated ripple current. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>After testing--Measure at 20°C</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance change: | $\leq \pm 25\%$ of initial value (WV=4), $\pm 20\%$ (WV \geq 6.3) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation factor: | $\leq 200\%$ of initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage current: | \leq The initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life | <u>Test Conditions</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Duration time: | 1000 Hrs | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ambient temperature: | +85°C | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Applied voltage: | According to JIS C-5102 4-3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>After testing--Measure at 20°C</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Same limits as for load life. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marking | White print on black sleeve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Applicable Standards | Characteristics of W of JIS C-5141 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Physical Dimensions and Mounting Details



| | | | | | |
|---------------|-----|-----|------|------|------|
| Diameter | 3 | 3.5 | 4 | 5 | 6.3 |
| Lead Pitch | 1.0 | 1.0 | 1.5 | 2.0 | 2.5 |
| Lead Diameter | 0.4 | 0.4 | 0.45 | 0.45 | 0.45 |

GP5 Series



Ir (mA) specified at 85°C and 120 KHz

GP5 Standard Products Table 4 to 16 Volt

| uF | 4 V | | 6.3 V | | 10 V | | 16 V | |
|-----|---------|--------|---------|--------|---------|--------|---------|--------|
| | Dia x L | Ir(mA) | Dia x L | Ir(mA) | Dia x L | Ir(mA) | Dia x L | Ir(mA) |
| 4.7 | | | | | | | 3 x 5 | 10 |
| 4.7 | | | | | | | | |
| 10 | | | 3 x 5 | 15 | | | 4 x 5 | 23 |
| 10 | | | | | | | 3.5 x 5 | 18 |
| 22 | 4 x 5 | 19 | 4 x 5 | 28 | 5 x 5 | 34 | 5 x 5 | 38 |
| 22 | 3 x 5 | 19 | | | | | | |
| 33 | 4 x 5 | 28 | 5 x 5 | 38 | 5 x 5 | 41 | 6.3 x 5 | 50 |
| 47 | 4 x 5 | 34 | 5 x 5 | 45 | 6.3 x 5 | 54 | 6.3 x 5 | 60 |
| 100 | 5 x 5 | 55 | 6.3 x 5 | 70 | 6.3 x 5 | 80 | | |
| 220 | 6.3 x 5 | 90 | | | | | | |

Ir (mA) specified at 85°C and 120 KHz

GP5 Standard Products Table 4 to 50 Volt

| uF | 25 V | | 35 V | | 50 V | |
|------|---------|--------|---------|--------|---------|--------|
| | Dia x L | Ir(mA) | Dia x L | Ir(mA) | Dia x L | Ir(mA) |
| 0.1 | | | | | 4 x 5 | 1 |
| 0.1 | | | | | 3 x 5 | 1 |
| 0.22 | | | | | 4 x 5 | 2 |
| 0.22 | | | | | 3 x 5 | 2 |
| 0.33 | | | | | 4 x 5 | 3 |
| 0.33 | | | | | 3 x 5 | 2.8 |
| 0.47 | | | | | 4 x 5 | 5 |
| 0.47 | | | | | 3 x 5 | 4 |
| 1 | | | | | 4 x 5 | 9 |
| 1 | | | | | 3 x 5 | 8 |
| 2.2 | | | 3 x 5 | 8 | 4 x 5 | 14 |
| 2.2 | | | | | 3.5 x 5 | 10 |
| 3.3 | 3 x 5 | 10 | 3.5 x 5 | 14 | 4 x 5 | 17 |
| 4.7 | 4 x 5 | 17 | 4 x 5 | 18 | 5 x 5 | 22 |
| 4.7 | 3.5 x 5 | 12 | | | | |
| 10 | 5 x 5 | 27 | 5 x 5 | 29 | 6.3 x 5 | 35 |
| 22 | 6.3 x 5 | 44 | 6.3 x 5 | 47 | | |
| 33 | 6.3 x 5 | 54 | | | | |