RF Power Plate Capacitors for Higher Voltages,
Class 1 Ceramic

**FEATURES**
- Low losses
- High reliability
- High voltage ratings

**APPLICATIONS**
These high quality power plate capacitors are designed for usage in high frequency heating, welding equipment, and working environments with effects of moisture, dust and other impurities where high voltage ratings are required.

**QUICK REFERENCE DATA**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramic Class</td>
<td>1</td>
</tr>
<tr>
<td>Ceramic Dielectric</td>
<td>R7, R16, R42, R85, R230</td>
</tr>
<tr>
<td>Type</td>
<td>PEF 220</td>
</tr>
<tr>
<td>Voltage (V&lt;sub&gt;p&lt;/sub&gt;)</td>
<td>12 000, 13 000, 14 000, 16 000, 17 000, 18 000, 20 000</td>
</tr>
<tr>
<td>Min. Capacitance (pF)</td>
<td>400, 4000, 7000, 250, 3000, 500, 160</td>
</tr>
<tr>
<td>Max. Capacitance (pF)</td>
<td>6000, 10 000, 1600, 8000, 1200, 3000, 500, 6000</td>
</tr>
<tr>
<td>Mounting</td>
<td>Screw terminal</td>
</tr>
</tbody>
</table>

**MATERIAL**
Capacitor elements made from class 1 ceramic dielectric with noble metal electrodes.
Flexible connection terminals copper / brass, silver plated, to allow for series and parallel interconnection.

**MARKING**
Type designator, capacitance value and tolerance, rated RF voltage, production date code, ceramic material code, manufacturer logo.

**FINISH**
Noble metal electrodes and terminals are protective lacquered.
The PEF 220 type features an insulating rim made from silicone elastomer to minimize the adverse effects of moisture, dust, and other impurities in the working environment and to improve the characteristics of the electrical field.

**CAPACITANCE RANGE**
160 pF to 10 nF

**CAPACITANCE TOLERANCE**
± 20 %, ± 10 %

**CERAMIC DIELECTRIC**
- R7 (TCC + 100 ppm/K)
- R16 (TCC + 100 ppm/K)
- R42 (TCC - 250 ppm/K)
- R85 (TCC - 750 ppm/K)
- R230 (TCC - 750 ppm/K)

**RATED VOLTAGE**
- 12 kV<sub>p</sub>
- 13 kV<sub>p</sub>
- 14 kV<sub>p</sub>
- 15 kV<sub>p</sub>
- 16 kV<sub>p</sub>
- 17 kV<sub>p</sub>
- 18 kV<sub>p</sub>
- 20 kV<sub>p</sub>

**DIELECTRIC STRENGTH TEST**
200 % of rated voltage, 50 Hz

**DISSIPATION FACTOR**
R7: max. 0.07 %
R16: max. 0.04 %
R42, R85, R230: max. 0.05 %
Measuring frequencies:
1 MHz (< 1 nF); 300 kHz or 100 kHz (≥ 1 nF)

**INSULATION RESISTANCE**
Min. 100 000 MΩ (at 25 °C)

**OPERATING TEMPERATURE RANGE**
-55 °C to +100 °C
**SAP PART NUMBER AND ELECTRICAL DATA**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>CERAMIC</th>
<th>CAP. VALUE (pF)</th>
<th>RATED VOLTAGE (kVp)</th>
<th>RATED POWER (1) (kvar)</th>
<th>RATED CURRENT (ARMS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEF220WP161##BF1</td>
<td>R 7</td>
<td>160</td>
<td>20</td>
<td>110</td>
<td>60</td>
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<tr>
<td>PEF220WP201##BF1</td>
<td>R 16</td>
<td>200</td>
<td>250</td>
<td>16</td>
<td>140</td>
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<tr>
<td>PEF220J301##BF1</td>
<td>R 42</td>
<td>300</td>
<td>400</td>
<td>12</td>
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<td>PEF220WF401##BF1</td>
<td>R 85</td>
<td>400</td>
<td>500</td>
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<tr>
<td>PEF220WN501##BG1</td>
<td>R 230</td>
<td>500</td>
<td>600</td>
<td>16</td>
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<tr>
<td>PEF220WL601##BG1</td>
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<td>600</td>
<td>700</td>
<td>14</td>
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<tr>
<td>PEF220WP801##BH1</td>
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<td>20</td>
<td>140</td>
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<tr>
<td>PEF220W122##BH1</td>
<td>R 230</td>
<td>1000</td>
<td>1200</td>
<td>20</td>
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<tr>
<td>PEF220W162##BH1</td>
<td>R 230</td>
<td>1600</td>
<td>2000</td>
<td>14</td>
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<tr>
<td>PEF220WP202##BJ1</td>
<td>R 230</td>
<td>2000</td>
<td>2500</td>
<td>20</td>
<td>140</td>
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<tr>
<td>PEF220WP252##BJ1</td>
<td>R 230</td>
<td>2500</td>
<td>3000</td>
<td>20</td>
<td>140</td>
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<tr>
<td>PEF220WM302##BJ1</td>
<td>R 230</td>
<td>3000</td>
<td>4000</td>
<td>17</td>
<td>140</td>
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<tr>
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<td>R 230</td>
<td>4000</td>
<td>5000</td>
<td>13</td>
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<tr>
<td>PEF220WH502##BJ1</td>
<td>R 230</td>
<td>5000</td>
<td>6000</td>
<td>12</td>
<td>140</td>
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<tr>
<td>PEF220WF602##BJ1</td>
<td>R 230</td>
<td>6000</td>
<td>7000</td>
<td>20</td>
<td>140</td>
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<tr>
<td>PEF220WM302##BJ1</td>
<td>R 230</td>
<td>6000</td>
<td>8000</td>
<td>15</td>
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<tr>
<td>PEF220WH103##BK1</td>
<td>R 230</td>
<td>10000</td>
<td>10000</td>
<td>13</td>
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</tbody>
</table>

**Notes**

- # 14\textsuperscript{th} to 15\textsuperscript{th} digit: capacitance tolerance code ± 20 % = 38, ± 10 % = 36
- \(^{(1)}\) The surface temperature during operation must not exceed +100 °C

**DIMENSIONS** in millimeters (inches)

- 43 max. (1.69 max.)
- \(43 \pm 1\) (1.77 ± 0.04)
- Insulating rim made from silicone elastomer
- 8-finger terminals used on types PEF220WP252##BJ2; PEF220WP252##BJ3; PEF220BJ702##BK1; PEF220BJ802##BK1; PEF220WH103##BK1
DERATING DIAGRAMS

PEF220WL601##BG1

PEF220WP801##BH1

PEF220WP102##BH1

PEF220WL122##BH1

PEF220WJ162##BH1

PEF220WP202##BJ1

For technical questions, contact: powcap@vishay.com

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