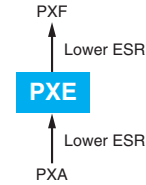


NPCAP™-PXE Series

- Super low ESR, impedance and high heat resistance have been obtained by using conductive polymer as electrolyte.
(ESR and rated ripple current values are improved from PXA series.)
- Rated voltage range : 2.5 to 16V_{dc}, Capacitance range : 33 to 2,700μF
- Suitable for DC-DC converters, voltage regulators and decoupling applications used on computer motherboards etc.
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant
- Halogen Free



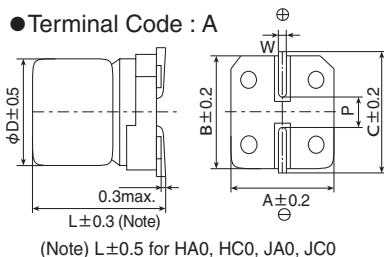
◆ SPECIFICATIONS

| Items | Characteristics | | | | | | | | | | | | |
|---|--|----------------------------------|-----------------------|--------------------|--------------------------------------|--------------|---------------------------------------|----------------------------------|---------------------------------------|-----------------|---|----|----|
| Category | | | | | | | | | | | | | |
| Temperature Range | -55 to +105°C | | | | | | | | | | | | |
| Rated Voltage Range | 2.5 to 16V _{dc} | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (M) (at 20°C, 120Hz) | | | | | | | | | | | | |
| Leakage Current *Note | Shall not exceed values shown in STANDARD RATINGS. (at 20°C after 2 minutes) | | | | | | | | | | | | |
| Dissipation Factor (tan δ) | 0.12 max. (at 20°C, 120Hz) | | | | | | | | | | | | |
| Low Temperature Characteristics (Max. Impedance Ratio) | Z(-25°C)/Z(+20°C) ≤ 1.15 Z(-55°C)/Z(+20°C) ≤ 1.25 (at 100kHz) | | | | | | | | | | | | |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 15,000 hours at 105°C. | | | | | | | | | | | | |
| | <table border="1"> <tr><td>Appearance</td><td>No significant damage</td></tr> <tr><td>Capacitance change</td><td>≤ ±20% of the initial value</td></tr> <tr><td>D.F. (tan δ)</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>ESR</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>Leakage current</td><td>≤ The initial specified value</td></tr> </table> | Appearance | No significant damage | Capacitance change | ≤ ±20% of the initial value | D.F. (tan δ) | ≤ 150% of the initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value | | |
| Appearance | No significant damage | | | | | | | | | | | | |
| Capacitance change | ≤ ±20% of the initial value | | | | | | | | | | | | |
| D.F. (tan δ) | ≤ 150% of the initial specified value | | | | | | | | | | | | |
| ESR | ≤ 150% of the initial specified value | | | | | | | | | | | | |
| Leakage current | ≤ The initial specified value | | | | | | | | | | | | |
| Bias Humidity | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to the DC rated voltage at 60°C, 90 to 95% RH for 1,000 hours. | | | | | | | | | | | | |
| | <table border="1"> <tr><td>Appearance</td><td>No significant damage</td></tr> <tr><td>Capacitance change</td><td>≤ ±20% of the initial value</td></tr> <tr><td>D.F. (tan δ)</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>ESR</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>Leakage current</td><td>≤ The initial specified value</td></tr> </table> | Appearance | No significant damage | Capacitance change | ≤ ±20% of the initial value | D.F. (tan δ) | ≤ 150% of the initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value | | |
| Appearance | No significant damage | | | | | | | | | | | | |
| Capacitance change | ≤ ±20% of the initial value | | | | | | | | | | | | |
| D.F. (tan δ) | ≤ 150% of the initial specified value | | | | | | | | | | | | |
| ESR | ≤ 150% of the initial specified value | | | | | | | | | | | | |
| Leakage current | ≤ The initial specified value | | | | | | | | | | | | |
| Surge Voltage | The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltage specified at 105°C for 30 seconds through a protective resistor (R=1kΩ) and discharge for 5 minutes 30 seconds. | | | | | | | | | | | | |
| | <table border="1"> <tr><td>Rated voltage (V_{dc})</td><td>2.5</td><td>4.0</td><td>6.3</td><td>10</td><td>16</td></tr> <tr><td>Surge voltage (V_{dc})</td><td>2.9</td><td>4.6</td><td>7.2</td><td>12</td><td>18</td></tr> </table> | Rated voltage (V _{dc}) | 2.5 | 4.0 | 6.3 | 10 | 16 | Surge voltage (V _{dc}) | 2.9 | 4.6 | 7.2 | 12 | 18 |
| Rated voltage (V _{dc}) | 2.5 | 4.0 | 6.3 | 10 | 16 | | | | | | | | |
| Surge voltage (V _{dc}) | 2.9 | 4.6 | 7.2 | 12 | 18 | | | | | | | | |
| | <table border="1"> <tr><td>Appearance</td><td>No significant damage</td></tr> <tr><td>Capacitance change</td><td>≤ ±20% of the initial value</td></tr> <tr><td>D.F. (tan δ)</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>ESR</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>Leakage current</td><td>≤ The initial specified value</td></tr> </table> | Appearance | No significant damage | Capacitance change | ≤ ±20% of the initial value | D.F. (tan δ) | ≤ 150% of the initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value | | |
| Appearance | No significant damage | | | | | | | | | | | | |
| Capacitance change | ≤ ±20% of the initial value | | | | | | | | | | | | |
| D.F. (tan δ) | ≤ 150% of the initial specified value | | | | | | | | | | | | |
| ESR | ≤ 150% of the initial specified value | | | | | | | | | | | | |
| Leakage current | ≤ The initial specified value | | | | | | | | | | | | |
| Soldering Heat | The following specifications shall be satisfied when the solder temperature is reduced back to 20°C to measure dip resistance after soldering has been performed under the recommended soldering conditions. | | | | | | | | | | | | |
| | <table border="1"> <tr><td>Appearance</td><td>No significant damage</td></tr> <tr><td>Capacitance value</td><td>Within the specified tolerance range</td></tr> <tr><td>D.F. (tan δ)</td><td>≤ The initial specified value</td></tr> <tr><td>ESR</td><td>≤ The initial specified value</td></tr> <tr><td>Leakage current</td><td>≤ The initial specified value (Voltage treatment)</td></tr> </table> | Appearance | No significant damage | Capacitance value | Within the specified tolerance range | D.F. (tan δ) | ≤ The initial specified value | ESR | ≤ The initial specified value | Leakage current | ≤ The initial specified value (Voltage treatment) | | |
| Appearance | No significant damage | | | | | | | | | | | | |
| Capacitance value | Within the specified tolerance range | | | | | | | | | | | | |
| D.F. (tan δ) | ≤ The initial specified value | | | | | | | | | | | | |
| ESR | ≤ The initial specified value | | | | | | | | | | | | |
| Leakage current | ≤ The initial specified value (Voltage treatment) | | | | | | | | | | | | |
| Failure Rate | 0.5% per 1,000 hours maximum (Confidence level 60% at 105°C) | | | | | | | | | | | | |

*Note : If any doubt arises, measure the leakage current after the following voltage treatment.
Voltage treatment : DC rated voltage is applied to the capacitors for 120 minutes at 105°C.

◆ DIMENSIONS [mm]

- Terminal Code : A



| Size Code | φD | L | A | B | C | W | P |
|-----------|-----|------|------|------|------|------------|-----|
| E61 | 5 | 5.8 | 5.3 | 5.3 | 5.9 | 0.5 to 0.8 | 1.4 |
| F61 | 6.3 | 5.8 | 6.6 | 6.6 | 7.2 | 0.5 to 0.8 | 1.9 |
| F80 | 6.3 | 7.7 | 6.6 | 6.6 | 7.2 | 0.5 to 0.8 | 1.9 |
| H70 | 8 | 6.7 | 8.3 | 8.3 | 9.0 | 0.7 to 1.1 | 3.1 |
| H80 | 8 | 7.7 | 8.3 | 8.3 | 9.0 | 0.7 to 1.1 | 3.1 |
| HA0 | 8 | 10.0 | 8.3 | 8.3 | 9.0 | 0.7 to 1.1 | 3.1 |
| HC0 | 8 | 12.0 | 8.3 | 8.3 | 9.0 | 0.7 to 1.1 | 3.1 |
| J80 | 10 | 7.7 | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |
| JA0 | 10 | 10.0 | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |
| JC0 | 10 | 12.2 | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |

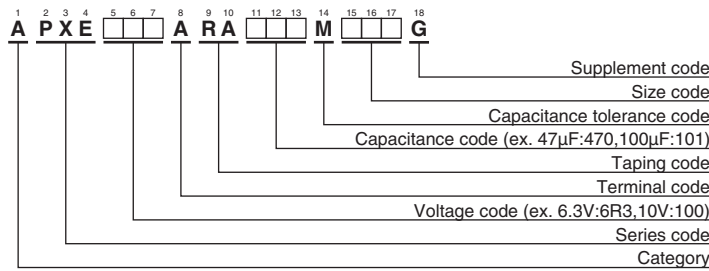
◆ MARKING

EX) 2.5V390μF



NPCAP™-PXE Series

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (conductive polymer type)"

◆STANDARD RATINGS

| WV (V _{dc}) | Cap (μF) | Size code | Leakage current (μA max./after 2min.) | ESR (mΩ max./20°C, 100k to 300kHz) | Rated ripple current (mArms/105°C, 100kHz) | Part No. |
|-----------------------|----------|-----------|---------------------------------------|------------------------------------|--|--------------------|
| 2.5 | 180 | E61 | 90.0 | 21 | 2,670 | APXE2R5ARA181ME61G |
| | 390 | F61 | 195 | 15 | 3,160 | APXE2R5ARA391MF61G |
| | 470 | F80 | 235 | 13 | 3,600 | APXE2R5ARA471MF80G |
| | 560 | F80 | 280 | 13 | 3,600 | APXE2R5ARA561MF80G |
| | 560 | H70 | 280 | 13 | 4,100 | APXE2R5ARA561MH70G |
| | 680 | H70 | 340 | 13 | 4,100 | APXE2R5ARA681MH70G |
| | 820 | H80 | 410 | 12 | 4,260 | APXE2R5ARA821MH80G |
| | 820 | HC0 | 410 | 9 | 5,400 | APXE2R5ARA821MHC0G |
| | 1,000 | H80 | 500 | 12 | 4,260 | APXE2R5ARA102MH80G |
| | 1,200 | J80 | 600 | 13 | 4,450 | APXE2R5ARA122MJ80G |
| | 1,500 | HA0 | 750 | 10 | 5,220 | APXE2R5ARA152MHA0G |
| | 1,500 | HC0 | 750 | 9 | 5,400 | APXE2R5ARA152MHC0G |
| 2,200 | JA0 | 1,100 | 10 | 5,500 | APXE2R5ARA222MJA0G | |
| 2,700 | JC0 | 1,350 | 9 | 5,600 | APXE2R5ARA272MJC0G | |
| 4 | 100 | E61 | 80.0 | 22 | 2,610 | APXE4R0ARA101ME61G |
| | 150 | E61 | 120 | 22 | 2,610 | APXE4R0ARA151ME61G |
| | 270 | F61 | 216 | 15 | 3,160 | APXE4R0ARA271MF61G |
| | 330 | F61 | 264 | 15 | 3,160 | APXE4R0ARA331MF61G |
| | 390 | F80 | 312 | 14 | 3,470 | APXE4R0ARA391MF80G |
| | 470 | H70 | 376 | 14 | 3,950 | APXE4R0ARA471MH70G |
| | 560 | H70 | 448 | 14 | 3,950 | APXE4R0ARA561MH70G |
| | 680 | H80 | 544 | 13 | 3,950 | APXE4R0ARA681MH80G |
| | 1,000 | HA0 | 800 | 10 | 5,220 | APXE4R0ARA102MHA0G |
| | 1,000 | J80 | 800 | 14 | 4,300 | APXE4R0ARA102MJ80G |
| | 1,200 | HC0 | 960 | 9 | 5,400 | APXE4R0ARA122MHC0G |
| | 1,200 | JA0 | 960 | 10 | 5,500 | APXE4R0ARA122MJA0G |
| | 1,500 | JA0 | 1,200 | 10 | 5,500 | APXE4R0ARA152MJA0G |
| | 1,800 | JA0 | 1,440 | 10 | 5,500 | APXE4R0ARA182MJA0G |
| 1,800 | JC0 | 1,440 | 9 | 5,600 | APXE4R0ARA182MJC0G | |
| 6.3 | 100 | E61 | 126 | 24 | 2,500 | APXE6R3ARA101ME61G |
| | 120 | E61 | 151 | 24 | 2,500 | APXE6R3ARA121ME61G |
| | 220 | F61 | 277 | 15 | 3,160 | APXE6R3ARA221MF61G |
| | 270 | F80 | 340 | 14 | 3,470 | APXE6R3ARA271MF80G |
| | 330 | F80 | 415 | 14 | 3,470 | APXE6R3ARA331MF80G |
| | 330 | H70 | 415 | 14 | 3,950 | APXE6R3ARA331MH70G |
| | 390 | H70 | 491 | 14 | 3,950 | APXE6R3ARA391MH70G |
| | 470 | H80 | 592 | 13 | 3,950 | APXE6R3ARA471MH80G |
| | 820 | HA0 | 1,030 | 12 | 4,770 | APXE6R3ARA821MHA0G |
| | 820 | HC0 | 1,030 | 10 | 5,150 | APXE6R3ARA821MHC0G |
| | 820 | J80 | 1,030 | 14 | 4,300 | APXE6R3ARA821MJ80G |
| | 1,200 | JA0 | 1,510 | 12 | 5,025 | APXE6R3ARA122MJA0G |
| | 1,500 | JA0 | 1,890 | 12 | 5,025 | APXE6R3ARA152MJA0G |
| | 1,500 | JC0 | 1,890 | 10 | 5,500 | APXE6R3ARA152MJC0G |



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS

NPCAP™-PXE Series

◆STANDARD RATINGS

| WV (V _{dc}) | Cap (μF) | Size code | Leakage current (μA max./after 2min.) | ESR (mΩ max./20°C, 100k to 300kHz) | Rated ripple current (mA rms/105°C, 100kHz) | Part No. |
|-----------------------|----------|-----------|---------------------------------------|------------------------------------|---|--------------------|
| 10 | 47 | E61 | 94.0 | 28 | 2,310 | APXE100ARA470ME61G |
| | 56 | E61 | 112 | 28 | 2,310 | APXE100ARA560ME61G |
| | 68 | E61 | 136 | 28 | 2,310 | APXE100ARA680ME61G |
| | 120 | F61 | 240 | 25 | 2,530 | APXE100ARA121MF61G |
| | 150 | F80 | 300 | 21 | 2,880 | APXE100ARA151MF80G |
| | 220 | H70 | 440 | 21 | 3,220 | APXE100ARA221MH70G |
| | 270 | H70 | 540 | 21 | 3,220 | APXE100ARA271MH70G |
| | 330 | H80 | 660 | 19 | 3,390 | APXE100ARA331MH80G |
| | 390 | HA0 | 780 | 17 | 4,000 | APXE100ARA391MHA0G |
| | 470 | J80 | 940 | 19 | 3,800 | APXE100ARA471MJ80G |
| 680 | JA0 | 1,360 | 13 | 4,820 | APXE100ARA681MJA0G | |
| 16 | 33 | E61 | 105 | 35 | 2,070 | APXE160ARA330ME61G |
| | 39 | E61 | 124 | 35 | 2,070 | APXE160ARA390ME61G |
| | 68 | F61 | 217 | 28 | 2,390 | APXE160ARA680MF61G |
| | 82 | F80 | 262 | 24 | 2,700 | APXE160ARA820MF80G |
| | 100 | F80 | 320 | 24 | 2,700 | APXE160ARA101MF80G |
| | 100 | H70 | 320 | 24 | 3,010 | APXE160ARA101MH70G |
| | 120 | H70 | 384 | 24 | 3,010 | APXE160ARA121MH70G |
| | 150 | H80 | 480 | 22 | 3,150 | APXE160ARA151MH80G |
| | 180 | HA0 | 576 | 18 | 3,890 | APXE160ARA181MHA0G |
| | 220 | HA0 | 704 | 18 | 3,890 | APXE160ARA221MHA0G |
| | 220 | J80 | 704 | 22 | 3,450 | APXE160ARA221MJ80G |
| | 330 | JA0 | 1,050 | 16 | 4,350 | APXE160ARA331MJA0G |

◆RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

| Frequency (Hz) | 120 | 1k | 10k | 50k | 100k to 500k |
|----------------|------|------|------|------|--------------|
| SMD type | 0.05 | 0.30 | 0.55 | 0.70 | 1.00 |

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