

NPCAP™-**PXA** Series

- Super low ESR, impedance and high heat resistance have been obtained by using conductive polymer as electrolyte
- Rated voltage range : 2.5 to 25V_{dc}, case size range : φ4×5.2L to φ10×12.2L
- Suitable for DC-DC converters, voltage regulators and decoupling applications used on computer motherboards etc.
- RoHS Compliant
- Halogen Free



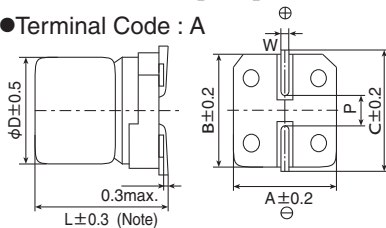
◆ SPECIFICATIONS

| Items | Characteristics | | | | | | | | | | |
|--|--|------------|-----------------------|--------------------|-----------------------------|-----------|---------------------------------------|-----|---------------------------------------|-----------------|-------------------------------|
| Category | | | | | | | | | | | |
| Temperature Range | -55 to +105°C | | | | | | | | | | |
| Rated Voltage Range | 2.5 to 25V _{dc} | | | | | | | | | | |
| Capacitance Tolerance | ±20% (M) (at 20°C, 120Hz) | | | | | | | | | | |
| Surge Voltage | Rated voltage × 1.15 (Rated voltage 2.5 to 20V _{dc} , 25V _{dc}) / Rated voltage × 1.00 (Rated voltage 23V _{dc}) (at 105°C) | | | | | | | | | | |
| Leakage Current | Shall not exceed values shown in STANDARD RATINGS. (at 20°C after 2 minutes) | | | | | | | | | | |
| Dissipation Factor (tanδ) | 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 2,000 hours (F46 : 1,000 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>DF (tanδ)</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 | DF (tanδ) | ≤ 150% of the initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value |
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| Capacitance change | ≤ ±20% of the initial value | | | | | | | | | | |
| DF (tanδ) | ≤ 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 (F46 : 500 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>DF (tanδ)</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 | DF (tanδ) | ≤ 150% of the initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value |
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| Capacitance change | ≤ ±20% of the initial value | | | | | | | | | | |
| DF (tanδ) | ≤ 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>Appearance</td><td>No significant damage</td></tr> <tr><td>Capacitance change</td><td>≤ ±20% of the initial value</td></tr> <tr><td>DF (tanδ)</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 | DF (tanδ) | ≤ 150% of the initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value |
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| Capacitance change | ≤ ±20% of the initial value | | | | | | | | | | |
| DF (tanδ) | ≤ 150% of the initial specified value | | | | | | | | | | |
| ESR | ≤ 150% of the initial specified value | | | | | | | | | | |
| Leakage current | ≤ The initial specified value | | | | | | | | | | |
| 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



Note : L+0.1/-0.2 for F46
L±0.5 for HC0 and JC0

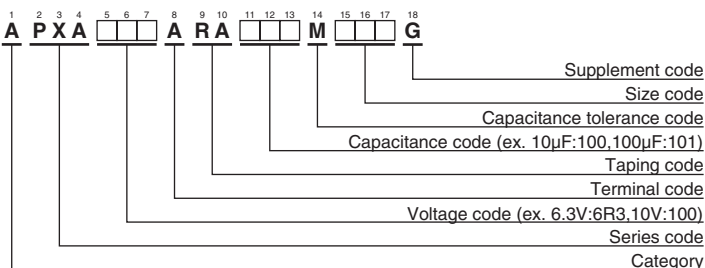
| Size code | φD | L | A | B | C | W | P |
|-----------|-----|------|------|------|------|------------|-----|
| D55 | 4 | 5.2 | 4.3 | 4.3 | 5.1 | 0.5 to 0.8 | 1.0 |
| E60 | 5 | 5.7 | 5.3 | 5.3 | 5.9 | 0.5 to 0.8 | 1.4 |
| F46 | 6.3 | 4.5 | 6.6 | 6.6 | 7.2 | 0.5 to 0.8 | 1.9 |
| F55 | 6.3 | 5.2 | 6.6 | 6.6 | 7.2 | 0.5 to 0.8 | 1.9 |
| F60 | 6.3 | 5.7 | 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 |
| 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 |
| JC0 | 10 | 12.2 | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |

◆ MARKING

EX) 16V39μF



◆ PART NUMBERING SYSTEM



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

◆ STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Size code | Leakage current (μAmax/ after 2 min.) | ESR (mΩmax/ 20°C, 100k to 300kHz) | Rated ripple current (mA _{rms} /105°C, 100kHz) | Part No. | WV (Vdc) | Cap (μF) | Size code | Leakage current (μAmax/ after 2 min.) | ESR (mΩmax/ 20°C, 100k to 300kHz) | Rated ripple current (mA _{rms} /105°C, 100kHz) | Part No. |
|----------|----------|-----------|---------------------------------------|-----------------------------------|---|--------------------|--------------------|----------|-----------|---------------------------------------|-----------------------------------|---|--------------------|
| 2.5 | 220 | F55 | 110 | 25 | 2,500 | APXA2R5ARA221MF55G | 10 | 4.7 | D55 | 24.0 | 240 | 670 | APXA100ARA4R7MD55G |
| | 220 | F60 | 110 | 25 | 2,500 | APXA2R5ARA221MF60G | | 6.8 | D55 | 34.0 | 240 | 670 | APXA100ARA6R8MD55G |
| | 560 | H70 | 280 | 23 | 3,100 | APXA2R5ARA561MH70G | | 10 | D55 | 50.0 | 220 | 700 | APXA100ARA100MD55G |
| | 680 | HCO | 340 | 12 | 4,770 | APXA2R5ARA681MHC0G | | 15 | D55 | 75.0 | 200 | 740 | APXA100ARA150MD55G |
| | 1,000 | J80 | 500 | 19 | 4,240 | APXA2R5ARA102MJ80G | | 33 | E60 | 66.0 | 40 | 1,270 | APXA100ARA330ME60G |
| | 1,500 | JCO | 750 | 10 | 5,500 | APXA2R5ARA152MJCOG | | 47 | E60 | 94.0 | 40 | 1,270 | APXA100ARA470ME60G |
| 4 | 33 | D55 | 66.0 | 200 | 740 | APXA4R0ARA330MD55G | | 47 | F46 | 235 | 41 | 1,560 | APXA100ARA470MF46G |
| | 100 | F55 | 80.0 | 26 | 2,450 | APXA4R0ARA101MF55G | | 47 | F60 | 94.0 | 31 | 2,250 | APXA100ARA470MF60G |
| | 100 | F60 | 80.0 | 26 | 2,450 | APXA4R0ARA101MF60G | | 56 | F55 | 112 | 31 | 2,250 | APXA100ARA560MF55G |
| | 120 | F46 | 240 | 38 | 1,710 | APXA4R0ARA121MF46G | | 56 | F60 | 112 | 31 | 2,250 | APXA100ARA560MF60G |
| | 150 | E60 | 120 | 30 | 1,490 | APXA4R0ARA151ME60G | | 120 | H70 | 240 | 27 | 2,800 | APXA100ARA121MH70G |
| | 150 | F55 | 120 | 26 | 2,450 | APXA4R0ARA151MF55G | | 150 | H70 | 300 | 27 | 2,800 | APXA100ARA151MH70G |
| | 150 | F60 | 120 | 26 | 2,450 | APXA4R0ARA151MF60G | | 270 | HCO | 540 | 14 | 4,420 | APXA100ARA271MHC0G |
| | 220 | H70 | 176 | 25 | 3,020 | APXA4R0ARA221MH70G | | 270 | J80 | 540 | 24 | 3,770 | APXA100ARA271MJ80G |
| | 330 | H70 | 264 | 25 | 3,020 | APXA4R0ARA331MH70G | | 330 | HCO | 660 | 14 | 4,420 | APXA100ARA331MHC0G |
| | 470 | J80 | 376 | 20 | 4,130 | APXA4R0ARA471MJ80G | | 330 | J80 | 660 | 24 | 3,770 | APXA100ARA331MJ80G |
| | 560 | HCO | 448 | 12 | 4,770 | APXA4R0ARA561MHC0G | | 470 | JCO | 940 | 12 | 5,300 | APXA100ARA471MJCOG |
| | 680 | J80 | 544 | 20 | 4,130 | APXA4R0ARA681MJ80G | | 560 | JCO | 1,120 | 12 | 5,300 | APXA100ARA561MJCOG |
| 820 | JCO | 656 | 10 | 5,500 | APXA4R0ARA821MJCOG | 16 | 3.3 | D55 | 26.0 | 260 | 660 | APXA160ARA3R3MD55G | |
| 1,200 | JCO | 960 | 10 | 5,500 | APXA4R0ARA122MJCOG | | 22 | E60 | 70.4 | 45 | 1,210 | APXA160ARA220MH60G | |
| 6.3 | 22 | D55 | 69.0 | 200 | 740 | | APXA6R3ARA220MD55G | 22 | F46 | 176 | 45 | 1,490 | APXA160ARA220MF46G |
| | 47 | E60 | 59.2 | 35 | 1,380 | | APXA6R3ARA470ME60G | 33 | F60 | 106 | 37 | 2,050 | APXA160ARA330MF60G |
| | 68 | F60 | 85.6 | 27 | 2,400 | | APXA6R3ARA680MF60G | 39 | F55 | 125 | 37 | 2,050 | APXA160ARA390MF55G |
| | 82 | F46 | 267 | 40 | 1,670 | | APXA6R3ARA820MF46G | 39 | F60 | 125 | 37 | 2,050 | APXA160ARA390MF60G |
| | 82 | F55 | 103 | 27 | 2,400 | | APXA6R3ARA820MF55G | 82 | H70 | 262 | 30 | 2,700 | APXA160ARA820MH70G |
| | 82 | F60 | 103 | 27 | 2,400 | | APXA6R3ARA820MF60G | 150 | J80 | 480 | 26 | 3,430 | APXA160ARA151MJ80G |
| | 100 | E60 | 126 | 35 | 1,380 | | APXA6R3ARA101ME60G | 180 | HCO | 576 | 16 | 4,360 | APXA160ARA181MHC0G |
| | 100 | F46 | 315 | 40 | 1,670 | | APXA6R3ARA101MF46G | 180 | J80 | 576 | 26 | 3,430 | APXA160ARA181MJ80G |
| | 100 | F55 | 126 | 27 | 2,400 | | APXA6R3ARA101MF55G | 220 | JCO | 704 | 14 | 5,050 | APXA160ARA221MJCOG |
| | 100 | F60 | 126 | 27 | 2,400 | | APXA6R3ARA101MF60G | 330 | JCO | 1,050 | 14 | 5,050 | APXA160ARA331MJCOG |
| | 120 | F60 | 151 | 27 | 2,400 | APXA6R3ARA121MF60G | 20 | 15 | F46 | 150 | 57 | 1,300 | APXA200ARA150MF46G |
| | 150 | H70 | 189 | 25 | 3,020 | APXA6R3ARA151MH70G | | 22 | F55 | 88.0 | 50 | 1,650 | APXA200ARA220MF55G |
| | 220 | H70 | 277 | 25 | 3,020 | APXA6R3ARA221MH70G | | 22 | F60 | 88.0 | 50 | 1,650 | APXA200ARA220MF60G |
| | 330 | J80 | 416 | 20 | 4,130 | APXA6R3ARA331MJ80G | | 39 | H70 | 156 | 45 | 2,000 | APXA200ARA390MH70G |
| | 390 | HCO | 491 | 12 | 4,770 | APXA6R3ARA391MHC0G | | 47 | H70 | 188 | 45 | 2,000 | APXA200ARA470MH70G |
| | 470 | HCO | 592 | 12 | 4,770 | APXA6R3ARA471MHC0G | | 82 | J80 | 328 | 40 | 2,500 | APXA200ARA820MJ80G |
| | 470 | J80 | 592 | 20 | 4,130 | APXA6R3ARA471MJ80G | | 150 | JCO | 600 | 20 | 4,320 | APXA200ARA151MJCOG |
| | 680 | JCO | 857 | 10 | 5,500 | APXA6R3ARA681MJCOG | | 23 | 15 | F46 | 172 | 57 | 1,300 |
| 820 | JCO | 1,030 | 10 | 5,500 | APXA6R3ARA821MJCOG | 10 | | | F60 | 125 | 65 | 1,500 | APXA250ARA100MF60G |
| 25 | 22 | H70 | 275 | 50 | 1,800 | APXA250ARA220MH70G | | | 22 | H70 | 275 | 50 | 1,800 |
| | 39 | J80 | 488 | 45 | 2,100 | APXA250ARA390MJ80G | | 39 | J80 | 488 | 45 | 2,100 | APXA250ARA390MJ80G |