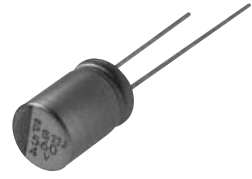


NPCAP™-PS Series

- Super low ESR, high temperature resistance
- Large capacitance & Improved high ripple current capability
- Rated voltage range : 2.5 to 25V_{dc}
- 2000 hours at 105°C
- Suitable for DC-DC converters, voltage regulators and decoupling applications
For computer motherboards
- Pb-free design



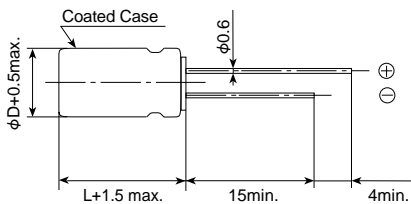
◆ SPECIFICATIONS

| 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×1.15V (at 105°C) | | | | | | | | | | |
| Leakage Current *Note | I=0.2CV (max.) Where, I : Leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V _{dc}) (at 20°C after 2 minutes) | | | | | | | | | | |
| Dissipation Factor (tanδ) | 0.12 max. (at 20°C, 120Hz) | | | | | | | | | | |
| Low Temperature Characteristics | Max. impedance ratio at 100kHz to the 20°C value Z(-25°C)/Z(+20°C) ≤ 1.15 Z(-55°C)/Z(+20°C) ≤ 1.25 | | | | | | | | | | |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 105°C. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial measured value</td> </tr> <tr> <td>D.F. (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 measured value | D.F. (tanδ) | ≤ 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 measured value | | | | | | | | | | |
| D.F. (tanδ) | ≤ 150% of the initial specified value | | | | | | | | | | |
| ESR | ≤ 150% of the initial specified value | | | | | | | | | | |
| Leakage current | ≤ The initial specified value | | | | | | | | | | |
| Bias Humidity Test | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to DC voltage at 60°C, 90 to 95% RH for 500 hours. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial measured value</td> </tr> <tr> <td>D.F. (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 measured value | D.F. (tanδ) | ≤ 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 measured value | | | | | | | | | | |
| D.F. (tanδ) | ≤ 150% of the initial specified value | | | | | | | | | | |
| ESR | ≤ 150% of the initial specified value | | | | | | | | | | |
| Leakage current | ≤ The initial specified value | | | | | | | | | | |
| Surge Voltage Test | The capacitors shall be subjected to 1000 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" style="width: 100%; border-collapse: collapse;"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial measured value</td> </tr> <tr> <td>D.F. (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 measured value | D.F. (tanδ) | ≤ 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 measured value | | | | | | | | | | |
| D.F. (tanδ) | ≤ 150% of the initial specified value | | | | | | | | | | |
| ESR | ≤ 150% of the initial specified value | | | | | | | | | | |
| Leakage current | ≤ The initial specified value | | | | | | | | | | |
| Failure Rate | 1% per 1000 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 : E



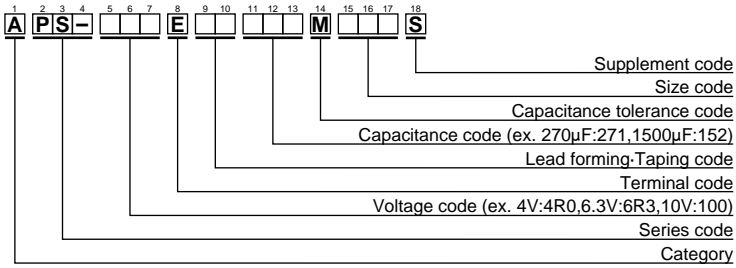
| φD | 8 | 10 |
|----|------|------|
| L | 11.5 | 12.5 |
| F | 3.5 | 5.0 |

◆ MARKING

EX) 4V820μF



◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (conductive polymer type)"

◆STANDARD RATINGS

| WV(V _{dc}) | Cap(μF) | Case size φD×L(mm) | ESR (mΩ _{max} /20°C, 100k to 300kHz) | Rated ripple current (mArms/105°C, 100kHz) | Part No. |
|----------------------|---------|-----------------------|--|---|--------------------|
| 2.5 | 680 | 8×11.5 | 10 | 5230 | APS-2R5E□□681MHB5S |
| | 1500 | 10×12.5 | 8 | 5500 | APS-2R5E□□152MJC5S |
| 4 | 560 | 8×11.5 | 10 | 5230 | APS-4R0E□□561MHB5S |
| | 820 | 10×12.5 | 8 | 5500 | APS-4R0E□□821MJC5S |
| 6.3 | 390 | 8×11.5 | 12 | 4770 | APS-6R3E□□391MHB5S |
| | 680 | 10×12.5 | 10 | 5500 | APS-6R3E□□681MJC5S |
| 10 | 270 | 8×11.5 | 14 | 4420 | APS-100E□□271MHB5S |
| | 470 | 10×12.5 | 12 | 5300 | APS-100E□□471MJC5S |
| 16 | 180 | 8×11.5 | 16 | 4360 | APS-160E□□181MHB5S |
| | 330 | 10×12.5 | 14 | 5050 | APS-160E□□331MJC5S |
| 20 | 100 | 8×11.5 | 24 | 3320 | APS-200E□□101MHB5S |
| | 150 | 10×12.5 | 20 | 4320 | APS-200E□□151MJC5S |
| 25 | 68 | 8×11.5 | 24 | 3320 | APS-250E□□680MHB5S |
| | 100 | 10×12.5 | 20 | 4320 | APS-250E□□101MJC5S |

□□ : Lead forming code and taping code