

Upgrade!
NPCAP™-PSA Series

- Super low ESR, high temperature resistance and high ripple current capability
- Rated voltage range : 2.5 to 16V_{dc}
- 2,000 hours at 105°C
- Suitable for DC-DC converters, voltage regulators and decoupling applications for computer motherboards
- RoHS Compliant



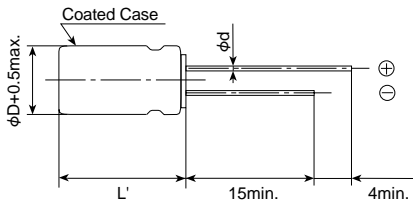
◆ SPECIFICATIONS

| 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) | | | | | | | | | | |
| Surge Voltage | Rated voltage(V)×1.15 (at 105°C) | | | | | | | | | | |
| Leakage Current | I=0.2CV (max.) | | | | | | | | | | |
| *Note | Where, I : Leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V _{dc}) (at 20°C after 2 minutes) | | | | | | | | | | |
| Dissipation Factor (tanδ) | 0.08 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 2,000 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 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 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 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 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 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 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 : E



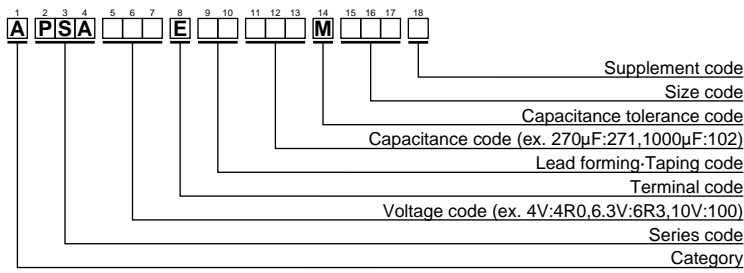
| φD | 6.3 | 8 | 10 |
|----|----------|----------|----|
| φd | 0.5 | 0.8 | |
| L' | L+0.3max | L+1.5max | |
| F | 2.5 | 3.5 | 5 |

◆ MARKING

EX) 4V560μF



◆PART NUMBERING SYSTEM



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

◆STANDARD RATINGS

| WV(Vdc) | Cap(μF) | Case size φD×L(mm) | ESR (mΩmax/20°C, 100k to 300kHz) | Rated ripple current (mArms/105°C, 100kHz) | Part No. |
|---------|---------|-----------------------|-------------------------------------|---|--------------------|
| 2.5 | 390 | 6.3×10.5 | 20 | 3,160 | APSA2R5E□□391MFA5G |
| | 680 | 8×11.5 | 7 | 5,580 | APSA2R5E□□681MHB5S |
| | 820 | 8×11.5 | 7 | 5,580 | APSA2R5E□□821MHB5S |
| | 1,000 | 10×11.5 | 6 | 5,860 | APSA2R5E□□102MJB5S |
| 4 | 270 | 6.3×10.5 | 20 | 3,160 | APSA4R0E□□271MFA5G |
| | 390 | 6.3×10.5 | 24 | 3,300 | APSA4R0E□□391MFA5G |
| | 560 | 8×11.5 | 7 | 5,580 | APSA4R0E□□561MHB5S |
| | 820 | 10×11.5 | 6 | 5,860 | APSA4R0E□□821MJB5S |
| 6.3 | 220 | 6.3×10.5 | 20 | 3,160 | APSA6R3E□□221MFA5G |
| | 330 | 6.3×10.5 | 28 | 3,190 | APSA6R3E□□331MFA5G |
| | 390 | 8×11.5 | 8 | 5,080 | APSA6R3E□□391MHB5S |
| | 680 | 10×11.5 | 7 | 5,860 | APSA6R3E□□681MJB5S |
| 10 | 47 | 6.3×10.5 | 25 | 2,820 | APSA100E□□470MFA5G |
| | 68 | 6.3×10.5 | 25 | 2,820 | APSA100E□□680MFA5G |
| | 100 | 6.3×10.5 | 25 | 2,820 | APSA100E□□101MFA5G |
| | 150 | 6.3×10.5 | 25 | 2,820 | APSA100E□□151MFA5G |
| | 270 | 8×11.5 | 9 | 4,710 | APSA100E□□271MHB5S |
| 16 | 470 | 10×11.5 | 8 | 5,650 | APSA100E□□471MJB5S |
| | 100 | 6.3×10.5 | 25 | 2,820 | APSA160E□□101MFA5G |

□□ : Lead forming code and taping code