

# FPCAP Functional Polymer Aluminum Solid Electrolytic Capacitors

## SS & SA & SB series

### Features

By using Functional Polymer cathode, Frequency & Temp. characteristics are greatly improved.

- Low ESR at a high frequency range.
- High ripple current capability.
- Long life and high reliability.

### Applications

- Switching Power Supply and DC/DC Converter.
- Back up Power Supplies of CPU(VRM etc.)
- Miniature high Power Supply.

### Environmental Correspondence

- Corresponding to Lead-free, RoHS compliance and Halogen-free.
- The Lead-free of terminal plating (Sn)

### Specifications

| Items                 |                 | Characteristic                                |
|-----------------------|-----------------|-----------------------------------------------|
|                       |                 | SS, SA, SB                                    |
| Operating temp. range |                 | -55 to +105°C                                 |
| Rated voltage range   |                 | 2.5 to 35V-DC                                 |
| Capacitance range     |                 | 10 to 560μF                                   |
| Capacitance tolerance |                 | ±20% (M)                                      |
| Endurance             | Test condition  | 105°C, rated voltage 2000Hrs.                 |
|                       | Capacitance     | Within ±20% of initial value before test      |
|                       | Leakage current | Not to exceed the initial specified value     |
|                       | ESR             | Not to exceed 150% of initial specified value |
|                       | tan δ           | Not to exceed 150% of initial specified value |
| Failure Rate          |                 | 0.5% / 1000Hrs. Max (60%CL)                   |

### Size (ESR) List

| R.V. (S.V.)<br>[V] | 2.5<br>(2.8)    |                 |                 |                 |                 | 4.0<br>(4.6)    |                 | 6.3<br>(7.2)    |                 |                 | 10<br>(11.5)    | 16<br>(18.4)    |                 | 25<br>(28.7) | 35<br>(40.2) |
|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------|--------------|
|                    | SS              | SA              | SB              | SA              | SB              | SS              | SA              | SB              | SA              | SS              | SA              | SS              | SS              |              |              |
| 10                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | 6.3×5.7<br>(60) | 6.3×5.7<br>(60) |              |              |
| 22                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | 6.3×5.7<br>(40) |                 |              |              |
| 27                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | 6.3×5.7<br>(40) |                 |              |              |
| 47                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | 6.3×5.7<br>(30) |                 |              |              |
| 56                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | 6.3×5.7<br>(30) |                 |              |              |
| 68                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | 6.3×5.7<br>(30) |                 |              |              |
| 100                |                 |                 |                 |                 |                 | 6.3×5.7<br>(25) |                 |                 |                 | 6.3×5.7<br>(24) | 6.3×7.7<br>(24) |                 |                 |              |              |
| 120                |                 |                 |                 |                 |                 |                 |                 |                 | 6.3×5.7<br>(18) |                 |                 |                 |                 |              |              |
| 180                |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | 6.3×5.7<br>(22) |                 |                 |              |              |
| 220                |                 |                 |                 |                 |                 | 6.3×5.7<br>(25) | 6.3×5.7<br>(15) | 6.3×5.7<br>(12) |                 |                 |                 |                 |                 |              |              |
| 270                |                 |                 |                 |                 |                 |                 | 6.3×5.7<br>(14) |                 |                 |                 |                 |                 |                 |              |              |
| 330                |                 | 6.3×5.7<br>(14) |                 | 6.3×5.7<br>(14) | 6.3×5.7<br>(11) | 6.3×5.7<br>(25) | 6.3×5.7<br>(14) |                 |                 |                 |                 |                 |                 |              |              |
| 390                |                 | 6.3×5.7<br>(14) | 6.3×5.7<br>(10) | 6.3×5.7<br>(14) |                 |                 |                 |                 |                 |                 |                 |                 |                 |              |              |
| 470                |                 | 6.3×5.7<br>(13) |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |              |              |
| 560                | 6.3×5.7<br>(25) | 6.3×5.7<br>(13) | 6.3×5.7<br>(10) |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |              |              |

Large Capacitance

Low ESR

φ6.3

SMD

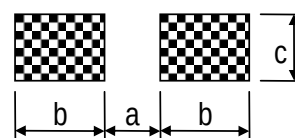
Lead-free

RoHS Compliance

UPGRADE



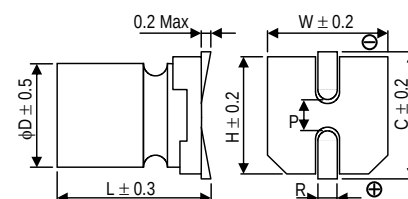
### Recommended land pattern



[Unit: mm]

| φD  | a   | b   | c   |
|-----|-----|-----|-----|
| 6.3 | 2.1 | 3.5 | 1.6 |

### Dimensions



[Unit: mm]

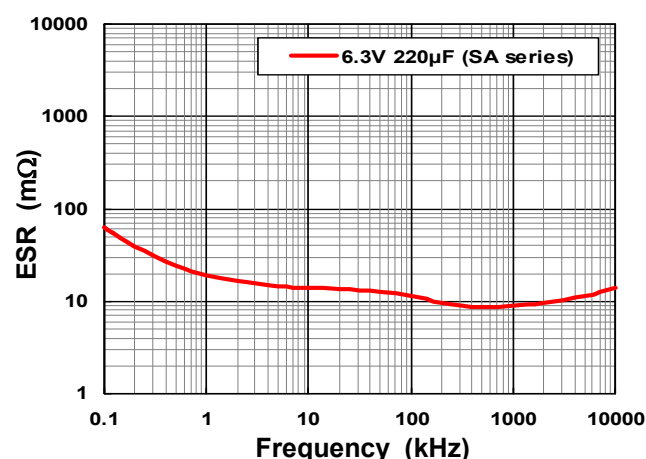
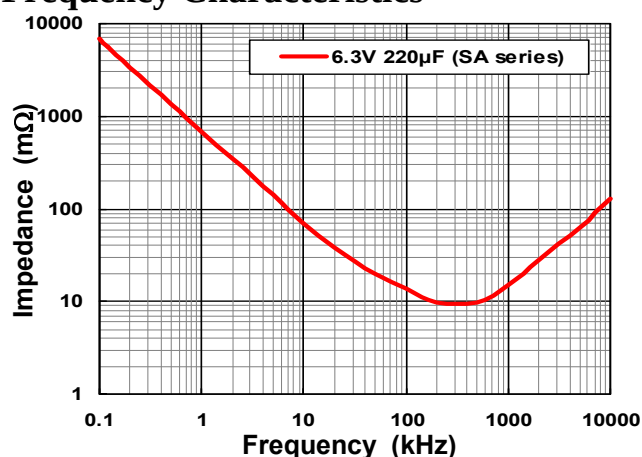
| φD×L    | W   | H   | C   | R          | P   |
|---------|-----|-----|-----|------------|-----|
| 6.3×5.7 | 6.5 | 6.5 | 7.2 | 0.5 to 0.9 | 2.1 |
| 6.3×7.7 | 6.5 | 6.5 | 7.2 | 0.5 to 0.9 | 2.1 |

## Part number & Specifications

| Rated Voltage<br>(V) | Rated Capacitance<br>( $\mu$ F, 120Hz) | Part Number    |                  | Leakage Current*<br>( $\mu$ A, 2 min) | tan $\delta$<br>(120Hz) | ESR<br>(m $\Omega$ , 100kHz) | Rated Ripple Current<br>(mA, r.m.s.) | Case Size<br>$\phi$ D $\times$ L(mm) |
|----------------------|----------------------------------------|----------------|------------------|---------------------------------------|-------------------------|------------------------------|--------------------------------------|--------------------------------------|
|                      |                                        | NICHICON       | FPCAP            |                                       |                         |                              |                                      |                                      |
| 2.5                  | 330                                    | RSA0E331MCN1GS | FP-2R5ME331M-SAR | 700                                   | 0.12                    | 14                           | 3160                                 | 6.3 $\times$ 5.7                     |
|                      | 390                                    | RSA0E391MCN1GS | FP-2R5ME391M-SAR | 700                                   | 0.12                    | 14                           | 3160                                 | 6.3 $\times$ 5.7                     |
|                      | 390                                    | RSB0E391MCN1GS | FP-2R5ME391M-SBR | 700                                   | 0.12                    | 10                           | 3650                                 | 6.3 $\times$ 5.7                     |
|                      | 470                                    | RSA0E471MCN1GS | FP-2R5ME471M-SAR | 700                                   | 0.12                    | 13                           | 3600                                 | 6.3 $\times$ 5.7                     |
|                      | 560                                    | RSS0E561MCN1GS | FP-2R5ME561M-SSR | 700                                   | 0.12                    | 25                           | 2500                                 | 6.3 $\times$ 5.7                     |
|                      | 560                                    | RSA0E561MCN1GS | FP-2R5ME561M-SAR | 700                                   | 0.12                    | 13                           | 3600                                 | 6.3 $\times$ 5.7                     |
|                      | 560                                    | RSB0E561MCN1GS | FP-2R5ME561M-SBR | 700                                   | 0.12                    | 10                           | 3800                                 | 6.3 $\times$ 5.7                     |
| 4.0                  | 330                                    | RSA0G331MCN1GS | FP-4R0ME331M-SAR | 700                                   | 0.12                    | 14                           | 3160                                 | 6.3 $\times$ 5.7                     |
|                      | 330                                    | RSB0G331MCN1GS | FP-4R0ME331M-SBR | 700                                   | 0.12                    | 11                           | 3700                                 | 6.3 $\times$ 5.7                     |
|                      | 390                                    | RSA0G391MCN1GS | FP-4R0ME391M-SAR | 700                                   | 0.12                    | 14                           | 3160                                 | 6.3 $\times$ 5.7                     |
| 6.3                  | 100                                    | RSS0J101MCN1GS | FP-6R3ME101M-SSR | 700                                   | 0.12                    | 25                           | 2500                                 | 6.3 $\times$ 5.7                     |
|                      | 220                                    | RSS0J221MCN1GS | FP-6R3ME221M-SSR | 700                                   | 0.12                    | 25                           | 2500                                 | 6.3 $\times$ 5.7                     |
|                      | 220                                    | RSA0J221MCN1GS | FP-6R3ME221M-SAR | 700                                   | 0.12                    | 15                           | 3160                                 | 6.3 $\times$ 5.7                     |
|                      | 220                                    | RSB0J221MCN1GS | FP-6R3ME221M-SBR | 700                                   | 0.12                    | 12                           | 3500                                 | 6.3 $\times$ 5.7                     |
|                      | 270                                    | RSA0J271MCN1GS | FP-6R3ME271M-SAR | 700                                   | 0.12                    | 14                           | 3160                                 | 6.3 $\times$ 5.7                     |
|                      | 330                                    | RSS0J331MCN1GS | FP-6R3ME331M-SSR | 700                                   | 0.12                    | 25                           | 2500                                 | 6.3 $\times$ 5.7                     |
|                      | 330                                    | RSA0J331MCN1GS | FP-6R3ME331M-SAR | 700                                   | 0.12                    | 14                           | 3160                                 | 6.3 $\times$ 5.7                     |
| 10                   | 120                                    | RSA1A121MCN1GS | FP-010ME121M-SAR | 700                                   | 0.12                    | 18                           | 2900                                 | 6.3 $\times$ 5.7                     |
| 16                   | 100                                    | RSS1C101MCN1GS | FP-016ME101M-SSR | 700                                   | 0.12                    | 24                           | 2490                                 | 6.3 $\times$ 5.7                     |
|                      | 100                                    | RSA1C101MCN1GS | FP-016ME101M-SAR | 700                                   | 0.12                    | 24                           | 2700                                 | 6.3 $\times$ 7.7                     |
|                      | 180                                    | RSA1C181MCN1GS | FP-016ME181M-SAR | 576                                   | 0.12                    | 22                           | 3300                                 | 6.3 $\times$ 5.7                     |
| 25                   | 10                                     | RSS1E100MCN1GS | FP-025ME100M-SSR | 100                                   | 0.12                    | 60                           | 1700                                 | 6.3 $\times$ 5.7                     |
|                      | 22                                     | RSS1E220MCN1GS | FP-025ME220M-SSR | 110                                   | 0.12                    | 40                           | 2100                                 | 6.3 $\times$ 5.7                     |
|                      | 27                                     | RSS1E270MCN1GS | FP-025ME270M-SSR | 135                                   | 0.12                    | 40                           | 2600                                 | 6.3 $\times$ 5.7                     |
|                      | 47                                     | RSS1E470MCN1GS | FP-025ME470M-SSR | 235                                   | 0.12                    | 30                           | 2800                                 | 6.3 $\times$ 5.7                     |
|                      | 56                                     | RSS1E560MCN1GS | FP-025ME560M-SSR | 280                                   | 0.12                    | 30                           | 2800                                 | 6.3 $\times$ 5.7                     |
|                      | 68                                     | RSS1E680MCN1GS | FP-025ME680M-SSR | 340                                   | 0.12                    | 30                           | 2800                                 | 6.3 $\times$ 5.7                     |
| 35                   | 10                                     | RSS1V100MCN1GS | FP-035ME100M-SSR | 100                                   | 0.12                    | 60                           | 1700                                 | 6.3 $\times$ 5.7                     |

\* In case of some doubt about measured values, measure after applying rated voltage for 120 minutes at 105°C.

## Frequency Characteristics



## Part Number (EX) 6.3V, 220 $\mu$ F, SA series

Nichicon P/N

|          |             |               |                   |                       |               |              |             |
|----------|-------------|---------------|-------------------|-----------------------|---------------|--------------|-------------|
| <b>R</b> | <b>SA</b>   | <b>0J</b>     | <b>221</b>        | <b>M</b>              | <b>CN</b>     | <b>1</b>     | <b>GS</b>   |
| Type     | Series Name | Rated Voltage | Rated Capacitance | Capacitance Tolerance | Configuration | Control Code | Taping Code |

FPCAP P/N

|                |               |                |                   |                       |             |             |              |
|----------------|---------------|----------------|-------------------|-----------------------|-------------|-------------|--------------|
| <b>FP</b>      | <b>6R3</b>    | <b>ME</b>      | <b>221</b>        | <b>M</b>              | <b>SA</b>   | <b>R</b>    |              |
| Commodity Mark | Rated Voltage | Classification | Rated Capacitance | Capacitance Tolerance | Series Name | Taping Code | Control Code |