

# FPCAP Functional Polymer Aluminum Solid Electrolytic Capacitors

## R7 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

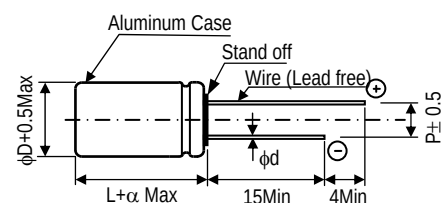
| Items                 |                 | Characteristics                           |
|-----------------------|-----------------|-------------------------------------------|
|                       |                 | R7                                        |
| Operating Temp. Range |                 | - 55 to + 105°C                           |
| Rated Voltage Range   |                 | 2.5 to 16V-DC                             |
| Capacitance Range     |                 | 68 to 1500μF                              |
| Capacitance Tolerance |                 | ± 20% (M)                                 |
| Endurance             | Condition       | 105°C 2000Hrs at rated voltage            |
|                       | Capacitance     | Within ± 20% of the value before test     |
|                       | Leakage Current | Not to exceed the value specified         |
|                       | tan δ           | Not to exceed 150% of the value specified |
| Failure Rate          |                 | 0.1% / 1000Hrs. Max (60%CL)               |

### Size List

[φD×L]

| R.V.(S.V.)<br>Cap. [μF] | 2.5<br>(2.8) | 4.0<br>(4.6) | 6.3<br>(7.2) | 10<br>(11.5) | 16<br>(18.4) |
|-------------------------|--------------|--------------|--------------|--------------|--------------|
| 68                      |              |              |              | 8×11.5       | 8×11.5       |
| 100                     |              |              |              | 8×11.5       | 8×11.5       |
| 150                     |              |              | 8×11.5       | 10×12.5      | 10×12.5      |
| 220                     |              |              | 8×11.5       | 10×12.5      | 10×12.5      |
| 270                     |              |              |              |              | 10×12.5      |
| 330                     |              |              | 10×12.5      |              | 10×12.5      |
| 390                     |              |              | 8×11.5       |              |              |
| 470                     |              |              |              | 10×12.5      |              |
| 560                     |              | 8×11.5       |              |              |              |
| 680                     | 8×11.5       |              | 10×12.5      | 10×12.5      |              |
| 820                     | 8×11.5       | 10×12.5      | 10×12.5      |              |              |
| 1000                    |              |              | 10×12.5      |              |              |
| 1200                    |              | 10×12.5      |              |              |              |
| 1500                    | 10×12.5      |              |              |              |              |

### Dimensions



[Unit : mm]

| φD×L    | φd  | P   | α   |
|---------|-----|-----|-----|
| 8×11.5  | 0.6 | 3.5 | 1.5 |
| 10×12.5 | 0.6 | 5.0 | 1.5 |

Ultra  
Low ESR

Lead-free

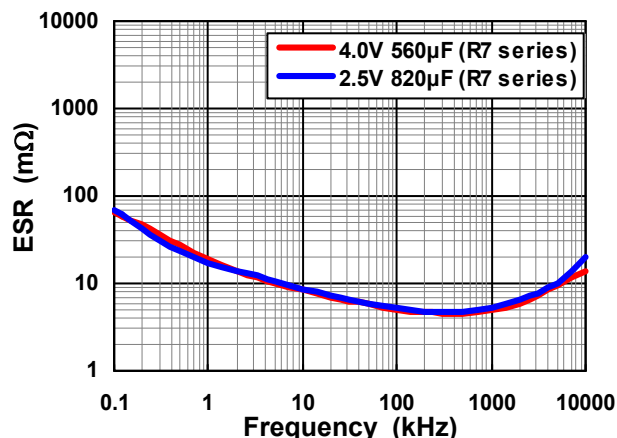
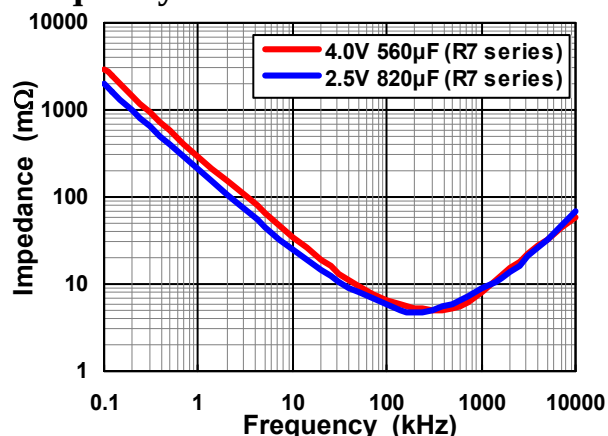
RoHS  
Compliance


## 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                  | 680                                    | RR70E681MDN1□□ | FP-2R5RE681M-R7□□ | 425                                    | 0.08                    | 7                            | 5600                                 | 8 $\times$ 11.5                      |
|                      | 820                                    | RR70E821MDN1□□ | FP-2R5RE821M-R7□□ | 513                                    | 0.08                    | 7                            | 5600                                 | 8 $\times$ 11.5                      |
|                      | 1500                                   | RR70E152MDN1□□ | FP-2R5RE152M-R7□□ | 938                                    | 0.08                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
| 4.0                  | 560                                    | RR70G561MDN1□□ | FP-4R0RE561M-R7□□ | 224                                    | 0.08                    | 7                            | 5600                                 | 8 $\times$ 11.5                      |
|                      | 820                                    | RR70G821MDN1□□ | FP-4R0RE821M-R7□□ | 328                                    | 0.08                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
|                      | 1200                                   | RR70G122MDN1□□ | FP-4R0RE122M-R7□□ | 960                                    | 0.15                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
| 6.3                  | 150                                    | RR70J151MDN1□□ | FP-6R3RE151M-R7□□ | 47                                     | 0.07                    | 7                            | 5600                                 | 8 $\times$ 11.5                      |
|                      | 220                                    | RR70J221MDN1□□ | FP-6R3RE221M-R7□□ | 69                                     | 0.07                    | 7                            | 5600                                 | 8 $\times$ 11.5                      |
|                      | 330                                    | RR70J331MDN1□□ | FP-6R3RE331M-R7□□ | 104                                    | 0.07                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
|                      | 390                                    | RR70J391MDN1□□ | FP-6R3RE391M-R7□□ | 246                                    | 0.08                    | 7                            | 5600                                 | 8 $\times$ 11.5                      |
|                      | 680                                    | RR70J681MDN1□□ | FP-6R3RE681M-R7□□ | 428                                    | 0.08                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
|                      | 820                                    | RR70J821MDN1□□ | FP-6R3RE821M-R7□□ | 517                                    | 0.12                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
|                      | 1000                                   | RR70J102MDN1□□ | FP-6R3RE102M-R7□□ | 630                                    | 0.12                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
| 10                   | 100                                    | RR71A101MDN1□□ | FP-010RE101M-R7□□ | 50                                     | 0.07                    | 7                            | 5600                                 | 8 $\times$ 11.5                      |
|                      | 220                                    | RR71A221MDN1□□ | FP-010RE221M-R7□□ | 110                                    | 0.07                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
|                      | 470                                    | RR71A471MDN1□□ | FP-010RE471M-R7□□ | 470                                    | 0.08                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
|                      | 680                                    | RR71A681MDN1□□ | FP-010RE681M-R7□□ | 1360                                   | 0.10                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
| 16                   | 68                                     | RR71C680MDN1□□ | FP-016RE680M-R7□□ | 54                                     | 0.06                    | 7                            | 5600                                 | 8 $\times$ 11.5                      |
|                      | 100                                    | RR71C101MDN1□□ | FP-016RE101M-R7□□ | 80                                     | 0.06                    | 7                            | 5600                                 | 8 $\times$ 11.5                      |
|                      | 150                                    | RR71C151MDN1□□ | FP-016RE151M-R7□□ | 120                                    | 0.06                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
|                      | 270                                    | RR71C271MDN1□□ | FP-016RE271M-R7□□ | 648                                    | 0.08                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |
|                      | 330                                    | RR71C331MDN1□□ | FP-016RE331M-R7□□ | 792                                    | 0.08                    | 7                            | 6100                                 | 10 $\times$ 12.5                     |

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

## Frequency Characteristics



## Part Number (EX) 4V, 560 $\mu$ F

Nichicon P/N

|          |             |               |                   |                       |               |              |              |
|----------|-------------|---------------|-------------------|-----------------------|---------------|--------------|--------------|
| <b>R</b> | <b>R7</b>   | <b>0G</b>     | <b>561</b>        | <b>M</b>              | <b>DN</b>     | <b>1</b>     |              |
| Type     | Series Name | Rated Voltage | Rated Capacitance | Capacitance Tolerance | Configuration | Control Code | Lead Forming |

CG: Cut lead (Bulk)  
KX:  $\phi$ 8, 3.5mm pitch taping  
PX:  $\phi$ 8, 5.0mm pitch taping  
PH:  $\phi$ 10, 5.0mm pitch taping

FPCAP P/N

|                |               |                |                   |                       |             |              |              |
|----------------|---------------|----------------|-------------------|-----------------------|-------------|--------------|--------------|
| <b>FP</b>      | <b>4R0</b>    | <b>RE</b>      | <b>561</b>        | <b>M</b>              | <b>R7</b>   | <b>R</b>     |              |
| Commodity Mark | Rated Voltage | Classification | Rated Capacitance | Capacitance Tolerance | Series Name | Lead Forming | Control Code |

R: Long lead (Bulk)  
CG: Cut lead (Bulk)  
K:  $\phi$ 8, 3.5mm pitch taping  
P:  $\phi$ 8, 5.0mm pitch taping  
PH:  $\phi$ 10, 5.0mm pitch taping