

## Surface Mount Type

Series : **FK** Type : **V**



### Features

- Endurance : 105 °C 2000 h to 5000 h
- Low impedance (40 % to 60 % less than FC series)  
Miniaturized (30 % to 50 % less than FC series)
- Vibration-proof product is available upon request. ( $\phi 8$  mm and larger)
- RoHS compliant

### Specifications

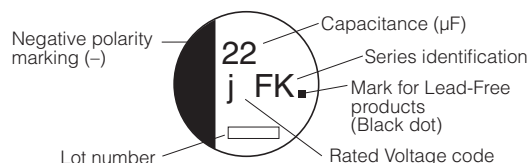
|                                    |                                                                                                                                                                                                                  |     |                                                        |    |    |    |    |    |    |     |                             |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------------------------------------------------------|----|----|----|----|----|----|-----|-----------------------------|
| Category temperature range         | -55 °C to +105 °C                                                                                                                                                                                                |     |                                                        |    |    |    |    |    |    |     |                             |
| Rated voltage range                | 6.3 V.DC to 100 V.DC                                                                                                                                                                                             |     |                                                        |    |    |    |    |    |    |     |                             |
| Capacitance range                  | 3.3 μF to 6800 μF                                                                                                                                                                                                |     |                                                        |    |    |    |    |    |    |     |                             |
| Capacitance tolerance              | ±20 % (120 Hz/+20 °C)                                                                                                                                                                                            |     |                                                        |    |    |    |    |    |    |     |                             |
| Leakage current                    | I ≤ 0.01 CV or 3 (μA) After 2 minutes (Whichever is greater)                                                                                                                                                     |     |                                                        |    |    |    |    |    |    |     |                             |
| Dissipation factor (tan δ)         | Please see the attached characteristics list                                                                                                                                                                     |     |                                                        |    |    |    |    |    |    |     |                             |
| Characteristics at low temperature | V.DC                                                                                                                                                                                                             | 6.3 | 10                                                     | 16 | 25 | 35 | 50 | 63 | 80 | 100 | (Impedance ratio at 120 Hz) |
|                                    | Z(-25 °C)/Z(+20 °C)                                                                                                                                                                                              | 2   | 2                                                      | 2  | 2  | 2  | 2  | 2  | 2  | 2   |                             |
|                                    | Z(-40 °C)/Z(+20 °C)                                                                                                                                                                                              | 3   | 3                                                      | 3  | 3  | 3  | 3  | 3  | 3  | 3   |                             |
|                                    | Z(-55 °C)/Z(+20 °C)                                                                                                                                                                                              | 4   | 4                                                      | 4  | 3  | 3  | 3  | 3  | 3  | 3   |                             |
| Endurance                          | After applying rated working voltage for 2000 hours at +105 °C±2 °C and then being stabilized at +20 °C, Capacitors shall meet the following limits. (≥φ12.5 and suffix “G” in φ8×10.2, φ10×10.2 are 5000 hours) |     |                                                        |    |    |    |    |    |    |     |                             |
|                                    | Capacitance change                                                                                                                                                                                               |     | Within ±30 % of the initial value (Suffix “G” is 35 %) |    |    |    |    |    |    |     |                             |
|                                    | tan δ                                                                                                                                                                                                            |     | ≤200 % of the initial limit (Suffix “G” is 300 %)      |    |    |    |    |    |    |     |                             |
|                                    | DC leakage current                                                                                                                                                                                               |     | Within the initial limit                               |    |    |    |    |    |    |     |                             |
| Shelf life                         | After storage for 1000 hours at +105 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance (With voltage treatment)                       |     |                                                        |    |    |    |    |    |    |     |                             |
| Resistance to soldering heat       | After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.                                                                                                          |     |                                                        |    |    |    |    |    |    |     |                             |
|                                    | Capacitance change                                                                                                                                                                                               |     | Within ±10 % of the initial value                      |    |    |    |    |    |    |     |                             |
|                                    | tan δ                                                                                                                                                                                                            |     | Within the initial limit                               |    |    |    |    |    |    |     |                             |
|                                    | DC leakage current                                                                                                                                                                                               |     | Within the initial limit                               |    |    |    |    |    |    |     |                             |
| AEC-Q200                           | AEC-Q200 compliant                                                                                                                                                                                               |     |                                                        |    |    |    |    |    |    |     |                             |

### Frequency correction factor for ripple current

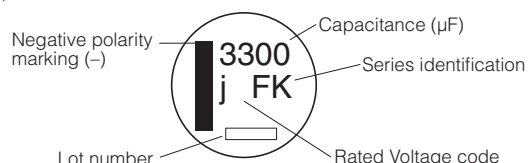
|                   |        |      |      |      |          |
|-------------------|--------|------|------|------|----------|
| Frequency (Hz)    | 50, 60 | 120  | 1 k  | 10 k | 100 k to |
| Correction factor | 0.70   | 0.75 | 0.90 | 0.95 | 1.00     |

### Marking

Example : 6.3 V.DC 22  $\mu$ F, 6.3 V.DC 3300  $\mu$ F  
Marking color : BLACK  
 $\leq \phi 10$

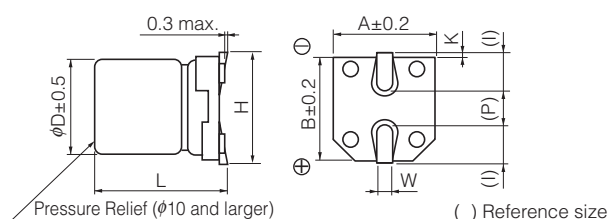


$\geq \phi 12.5$



| R. Voltage (V.DC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 |
|-------------------|-----|----|----|----|----|----|----|----|-----|
| Code              | j   | A  | C  | E  | V  | H  | J  | K  | 2A  |

### Dimensions



(Unit : mm)

| Size code | $\phi D$ | L              | A,B  | H         | I   | W              | P   | K                     |
|-----------|----------|----------------|------|-----------|-----|----------------|-----|-----------------------|
| B         | 4.0      | 5.8 $\pm 0.3$  | 4.3  | 5.5 max.  | 1.8 | 0.65 $\pm 0.1$ | 1.0 | 0.35 $^{+1.5}_{-0.2}$ |
| C         | 5.0      | 5.8 $\pm 0.3$  | 5.3  | 6.5 max.  | 2.2 | 0.65 $\pm 0.1$ | 1.5 | 0.35 $^{+1.5}_{-0.2}$ |
| D         | 6.3      | 5.8 $\pm 0.3$  | 6.6  | 7.8 max.  | 2.6 | 0.65 $\pm 0.1$ | 1.8 | 0.35 $^{+1.5}_{-0.2}$ |
| D8        | 6.3      | 7.7 $\pm 0.3$  | 6.6  | 7.8 max.  | 2.6 | 0.65 $\pm 0.1$ | 1.8 | 0.35 $^{+1.5}_{-0.2}$ |
| E         | 8.0      | 6.2 $\pm 0.3$  | 8.3  | 9.5 max.  | 3.4 | 0.65 $\pm 0.1$ | 2.2 | 0.35 $^{+1.5}_{-0.2}$ |
| F         | 8.0      | 10.2 $\pm 0.3$ | 8.3  | 10.0 max. | 3.4 | 0.90 $\pm 0.2$ | 3.1 | 0.70 $\pm 0.2$        |
| G         | 10.0     | 10.2 $\pm 0.3$ | 10.3 | 12.0 max. | 3.5 | 0.90 $\pm 0.2$ | 4.6 | 0.70 $\pm 0.2$        |
| H13       | 12.5     | 13.5 $\pm 0.5$ | 13.5 | 15.0 max. | 4.7 | 0.90 $\pm 0.3$ | 4.4 | 0.70 $\pm 0.3$        |
| J16       | 16.0     | 16.5 $\pm 0.5$ | 17.0 | 19.0 max. | 5.5 | 1.20 $\pm 0.3$ | 6.7 | 0.70 $\pm 0.3$        |
| K16       | 18.0     | 16.5 $\pm 0.5$ | 19.0 | 21.0 max. | 6.7 | 1.20 $\pm 0.3$ | 6.7 | 0.70 $\pm 0.3$        |

## Characteristics list

Endurance : 105 °C 2000 h (≥ ϕ12.5 : 5000 h)

| Rated voltage<br>(V.DC) | Cap.<br>(±20 %) (μF) | Case size (mm) |      | Size*<br>code | Specification                                           |                                           |                               | Part No.     | Reflow | Min. Packaging Qty<br>Taping (pcs) |
|-------------------------|----------------------|----------------|------|---------------|---------------------------------------------------------|-------------------------------------------|-------------------------------|--------------|--------|------------------------------------|
|                         |                      | ϕD             | L    |               | Ripple current<br>(100 kHz)<br>(+105 °C)<br>(mA r.m.s.) | Impedance<br>(100 kHz)<br>(+20 °C)<br>(Ω) | tan δ<br>(120 Hz)<br>(+20 °C) |              |        |                                    |
| 6.3                     | 22                   | 4              | 5.8  | B             | 90                                                      | 1.35                                      | 0.26                          | EEEFK0J220R  | (1)    | 2000                               |
|                         | 47                   | 4              | 5.8  | (B)           | 90                                                      | 1.35                                      | 0.26                          | EEEFK0J470UR | (1)    | 2000                               |
|                         |                      | 5              | 5.8  | C             | 160                                                     | 0.70                                      | 0.26                          | EEEFK0J470R  | (1)    | 1000                               |
|                         | 100                  | 5              | 5.8  | (C)           | 160                                                     | 0.70                                      | 0.26                          | EEEFK0J101UR | (1)    | 1000                               |
|                         |                      | 6.3            | 5.8  | D             | 240                                                     | 0.36                                      | 0.26                          | EEEFK0J101P  | (1)    | 1000                               |
|                         | 220                  | 6.3            | 5.8  | D             | 240                                                     | 0.36                                      | 0.26                          | EEEFK0J221P  | (1)    | 1000                               |
|                         | 330                  | 6.3            | 7.7  | D8            | 280                                                     | 0.34                                      | 0.26                          | EEEFK0J331XP | (1)    | 900                                |
|                         |                      | 8              | 6.2  | E             | 300                                                     | 0.26                                      | 0.26                          | EEEFK0J331P  | (2)    | 1000                               |
|                         | 470                  | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.26                          | EEEFK0J471P  | (2)    | 500                                |
|                         | 1000                 | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.26                          | EEEFK0J102P  | (2)    | 500                                |
|                         | 1500                 | 10             | 10.2 | G             | 850                                                     | 0.08                                      | 0.26                          | EEEFK0J152P  | (2)    | 500                                |
|                         | 3300                 | 12.5           | 13.5 | H13           | 1100                                                    | 0.06                                      | 0.30                          | EEVFK0J332Q  | (3)    | 200                                |
|                         | 6800                 | 16             | 16.5 | J16           | 1800                                                    | 0.035                                     | 0.36                          | EEVFK0J682M  | (3)    | 125                                |
| 10                      | 22                   | 4              | 5.8  | B             | 90                                                      | 1.35                                      | 0.19                          | EEEFK1A220R  | (1)    | 2000                               |
|                         | 33                   | 4              | 5.8  | (B)           | 90                                                      | 1.35                                      | 0.19                          | EEEFK1A330UR | (1)    | 2000                               |
|                         |                      | 5              | 5.8  | C             | 160                                                     | 0.70                                      | 0.19                          | EEEFK1A330R  | (1)    | 1000                               |
|                         | 150                  | 6.3            | 5.8  | D             | 240                                                     | 0.36                                      | 0.19                          | EEEFK1A151P  | (1)    | 1000                               |
|                         | 220                  | 6.3            | 7.7  | D8            | 280                                                     | 0.34                                      | 0.19                          | EEEFK1A221XP | (1)    | 900                                |
|                         |                      | 8              | 6.2  | E             | 300                                                     | 0.26                                      | 0.19                          | EEEFK1A221P  | (2)    | 1000                               |
|                         | 330                  | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.19                          | EEEFK1A331P  | (2)    | 500                                |
|                         | 470                  | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.19                          | EEEFK1A471P  | (2)    | 500                                |
|                         | 680                  | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.19                          | EEEFK1A681P  | (2)    | 500                                |
|                         | 1000                 | 10             | 10.2 | G             | 850                                                     | 0.08                                      | 0.19                          | EEEFK1A102P  | (2)    | 500                                |
|                         | 2200                 | 12.5           | 13.5 | H13           | 1100                                                    | 0.06                                      | 0.21                          | EEVFK1A222Q  | (3)    | 200                                |
|                         | 4700                 | 16             | 16.5 | J16           | 1800                                                    | 0.035                                     | 0.25                          | EEVFK1A472M  | (3)    | 125                                |
|                         | 6800                 | 18             | 16.5 | K16           | 2060                                                    | 0.033                                     | 0.29                          | EEVFK1A682M  | (3)    | 125                                |
| 16                      | 10                   | 4              | 5.8  | B             | 90                                                      | 1.35                                      | 0.16                          | EEEFK1C100R  | (1)    | 2000                               |
|                         | 22                   | 4              | 5.8  | (B)           | 90                                                      | 1.35                                      | 0.16                          | EEEFK1C220UR | (1)    | 2000                               |
|                         |                      | 5              | 5.8  | C             | 160                                                     | 0.70                                      | 0.16                          | EEEFK1C220R  | (1)    | 1000                               |
|                         | 47                   | 5              | 5.8  | (C)           | 160                                                     | 0.70                                      | 0.16                          | EEEFK1C470UR | (1)    | 1000                               |
|                         |                      | 6.3            | 5.8  | D             | 240                                                     | 0.36                                      | 0.16                          | EEEFK1C470P  | (1)    | 1000                               |
|                         | 68                   | 6.3            | 5.8  | D             | 240                                                     | 0.36                                      | 0.16                          | EEEFK1C680P  | (1)    | 1000                               |
|                         | 100                  | 6.3            | 5.8  | D             | 240                                                     | 0.36                                      | 0.16                          | EEEFK1C101P  | (1)    | 1000                               |
|                         | 150                  | 6.3            | 7.7  | D8            | 280                                                     | 0.34                                      | 0.16                          | EEEFK1C151XP | (1)    | 900                                |
|                         |                      | 6.3            | 7.7  | D8            | 280                                                     | 0.34                                      | 0.16                          | EEEFK1C221XP | (1)    | 900                                |
|                         | 220                  | 8              | 6.2  | E             | 300                                                     | 0.26                                      | 0.16                          | EEEFK1C221P  | (2)    | 1000                               |
|                         |                      | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.16                          | EEEFK1C331P  | (2)    | 500                                |
|                         | 470                  | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.16                          | EEEFK1C471P  | (2)    | 500                                |
|                         | 680                  | 10             | 10.2 | G             | 850                                                     | 0.08                                      | 0.16                          | EEEFK1C681P  | (2)    | 500                                |
|                         | 1500                 | 12.5           | 13.5 | H13           | 1100                                                    | 0.06                                      | 0.16                          | EEVFK1C152Q  | (3)    | 200                                |
|                         | 3300                 | 16             | 16.5 | J16           | 1800                                                    | 0.035                                     | 0.20                          | EEVFK1C332M  | (3)    | 125                                |
|                         | 4700                 | 18             | 16.5 | K16           | 2060                                                    | 0.033                                     | 0.22                          | EEVFK1C472M  | (3)    | 125                                |
| 25                      | 10                   | 4              | 5.8  | B             | 90                                                      | 1.35                                      | 0.14                          | EEEFK1E100R  | (1)    | 2000                               |
|                         | 22                   | 5              | 5.8  | C             | 160                                                     | 0.70                                      | 0.14                          | EEEFK1E220R  | (1)    | 1000                               |
|                         |                      | 5              | 5.8  | (C)           | 160                                                     | 0.70                                      | 0.14                          | EEEFK1E330UR | (1)    | 1000                               |
|                         | 33                   | 6.3            | 5.8  | D             | 240                                                     | 0.36                                      | 0.14                          | EEEFK1E330P  | (1)    | 1000                               |
|                         |                      | 6.3            | 5.8  | D             | 240                                                     | 0.36                                      | 0.14                          | EEEFK1E470P  | (1)    | 1000                               |
|                         | 68                   | 6.3            | 5.8  | D             | 240                                                     | 0.36                                      | 0.14                          | EEEFK1E680P  | (1)    | 1000                               |
|                         | 100                  | 6.3            | 7.7  | D8            | 280                                                     | 0.34                                      | 0.14                          | EEEFK1E101XP | (1)    | 900                                |
|                         |                      | 8              | 6.2  | E             | 300                                                     | 0.26                                      | 0.14                          | EEEFK1E101P  | (2)    | 1000                               |
|                         | 150                  | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.14                          | EEEFK1E151P  | (2)    | 500                                |
|                         | 220                  | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.14                          | EEEFK1E221P  | (2)    | 500                                |
|                         | 330                  | 8              | 10.2 | F             | 600                                                     | 0.16                                      | 0.14                          | EEEFK1E331P  | (2)    | 500                                |
|                         | 470                  | 10             | 10.2 | G             | 850                                                     | 0.08                                      | 0.14                          | EEEFK1E471P  | (2)    | 500                                |
|                         | 1000                 | 12.5           | 13.5 | H13           | 1100                                                    | 0.06                                      | 0.14                          | EEVFK1E102Q  | (3)    | 200                                |
|                         | 1500                 | 16             | 16.5 | J16           | 1800                                                    | 0.035                                     | 0.14                          | EEVFK1E152M  | (3)    | 125                                |
|                         | 2200                 | 16             | 16.5 | J16           | 1800                                                    | 0.035                                     | 0.16                          | EEVFK1E222M  | (3)    | 125                                |
|                         | 3300                 | 18             | 16.5 | K16           | 2060                                                    | 0.033                                     | 0.18                          | EEVFK1E332M  | (3)    | 125                                |

\* Size code( ) : Miniaturization product

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

· When requesting vibration-proof product, please put the last "V" instead to "P"

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.

Should a safety concern arise regarding this product, please be sure to contact us immediately.

## Characteristics list

Endurance : 105 °C 2000 h (≥ ϕ12.5 : 5000 h)

| Rated voltage (V.DC) | Cap. (±20 %) (μF) | Case size (mm) |      | Size* code | Specification                                  |                                  |                         | Part No.     | Reflow | Min. Packaging Qty |
|----------------------|-------------------|----------------|------|------------|------------------------------------------------|----------------------------------|-------------------------|--------------|--------|--------------------|
|                      |                   | ϕD             | L    |            | Ripple current (100 kHz) (+105 °C) (mA r.m.s.) | Impedance (100 kHz) (+20 °C) (Ω) | tan δ (120 Hz) (+20 °C) |              |        | Taping (pcs)       |
| 35                   | 4.7               | 4              | 5.8  | B          | 90                                             | 1.35                             | 0.12                    | EEEFK1V4R7R  | (1)    | 2000               |
|                      | 10                | 4              | 5.8  | (B)        | 90                                             | 1.35                             | 0.12                    | EEEFK1V100UR | (1)    | 2000               |
|                      |                   | 5              | 5.8  | C          | 160                                            | 0.70                             | 0.12                    | EEEFK1V100R  | (1)    | 1000               |
|                      | 22                | 5              | 5.8  | C          | 160                                            | 0.70                             | 0.12                    | EEEFK1V220R  | (1)    | 1000               |
|                      | 33                | 6.3            | 5.8  | D          | 240                                            | 0.36                             | 0.12                    | EEEFK1V330P  | (1)    | 1000               |
|                      | 47                | 6.3            | 5.8  | D          | 240                                            | 0.36                             | 0.12                    | EEEFK1V470P  | (1)    | 1000               |
|                      | 68                | 6.3            | 7.7  | D8         | 280                                            | 0.34                             | 0.12                    | EEEFK1V680XP | (1)    | 900                |
|                      | 100               | 6.3            | 7.7  | D8         | 280                                            | 0.34                             | 0.12                    | EEEFK1V101XP | (1)    | 900                |
|                      |                   | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.12                    | EEEFK1V101P  | (2)    | 500                |
|                      | 150               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.12                    | EEEFK1V151P  | (2)    | 500                |
|                      | 220               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.12                    | EEEFK1V221P  | (2)    | 500                |
|                      | 330               | 10             | 10.2 | G          | 850                                            | 0.08                             | 0.12                    | EEEFK1V331P  | (2)    | 500                |
|                      | 470               | 12.5           | 13.5 | H13        | 1100                                           | 0.06                             | 0.12                    | EEVFK1V471Q  | (3)    | 200                |
|                      | 680               | 12.5           | 13.5 | H13        | 1100                                           | 0.06                             | 0.12                    | EEVFK1V681Q  | (3)    | 200                |
|                      | 1000              | 16             | 16.5 | J16        | 1800                                           | 0.035                            | 0.12                    | EEVFK1V102M  | (3)    | 125                |
|                      | 1500              | 16             | 16.5 | J16        | 1800                                           | 0.035                            | 0.12                    | EEVFK1V152M  | (3)    | 125                |
| 50                   | 4.7               | 4              | 5.8  | B          | 60                                             | 2.90                             | 0.10                    | EEEFK1H4R7R  | (1)    | 2000               |
|                      | 10                | 5              | 5.8  | (C)        | 85                                             | 1.52                             | 0.10                    | EEEFK1H100UR | (1)    | 1000               |
|                      |                   | 6.3            | 5.8  | D          | 165                                            | 0.88                             | 0.10                    | EEEFK1H100P  | (1)    | 1000               |
|                      | 22                | 6.3            | 5.8  | D          | 165                                            | 0.88                             | 0.10                    | EEEFK1H220P  | (1)    | 1000               |
|                      | 33                | 6.3            | 7.7  | D8         | 195                                            | 0.68                             | 0.10                    | EEEFK1H330XP | (1)    | 900                |
|                      |                   | 8              | 6.2  | E          | 195                                            | 0.68                             | 0.10                    | EEEFK1H330P  | (2)    | 1000               |
|                      | 47                | 6.3            | 7.7  | D8         | 195                                            | 0.68                             | 0.10                    | EEEFK1H470XP | (1)    | 900                |
|                      |                   | 8              | 6.2  | E          | 195                                            | 0.68                             | 0.10                    | EEEFK1H470P  | (2)    | 1000               |
|                      | 100               | 8              | 10.2 | F          | 350                                            | 0.34                             | 0.10                    | EEEFK1H101P  | (2)    | 500                |
|                      | 150               | 10             | 10.2 | G          | 670                                            | 0.18                             | 0.10                    | EEEFK1H151P  | (2)    | 500                |
|                      | 220               | 10             | 10.2 | G          | 670                                            | 0.18                             | 0.10                    | EEEFK1H221P  | (2)    | 500                |
|                      | 330               | 12.5           | 13.5 | H13        | 900                                            | 0.12                             | 0.10                    | EEVFK1H331Q  | (3)    | 200                |
|                      | 390               | 12.5           | 13.5 | H13        | 900                                            | 0.12                             | 0.10                    | EEVFK1H391Q  | (3)    | 200                |
|                      | 470               | 16             | 16.5 | J16        | 1610                                           | 0.073                            | 0.10                    | EEVFK1H471M  | (3)    | 125                |
|                      | 560               | 16             | 16.5 | J16        | 1610                                           | 0.073                            | 0.10                    | EEVFK1H561M  | (3)    | 125                |
|                      | 680               | 16             | 16.5 | J16        | 1610                                           | 0.073                            | 0.10                    | EEVFK1H681M  | (3)    | 125                |
|                      | 1000              | 16             | 16.5 | J16        | 1610                                           | 0.073                            | 0.10                    | EEVFK1H102M  | (3)    | 125                |
| 63                   | 4.7               | 5              | 5.8  | C          | 50                                             | 3.00                             | 0.08                    | EEEFK1J4R7R  | (1)    | 1000               |
|                      | 10                | 6.3            | 5.8  | D          | 80                                             | 1.50                             | 0.08                    | EEEFK1J100P  | (1)    | 1000               |
|                      | 22                | 6.3            | 7.7  | D8         | 120                                            | 1.20                             | 0.08                    | EEEFK1J220XP | (1)    | 900                |
|                      |                   | 8              | 6.2  | E          | 120                                            | 1.20                             | 0.08                    | EEEFK1J220P  | (2)    | 1000               |
|                      | 33                | 8              | 10.2 | F          | 250                                            | 0.65                             | 0.08                    | EEEFK1J330P  | (2)    | 500                |
|                      | 47                | 8              | 10.2 | F          | 250                                            | 0.65                             | 0.08                    | EEEFK1J470P  | (2)    | 500                |
|                      | 68                | 8              | 10.2 | (F)        | 250                                            | 0.65                             | 0.08                    | EEEFK1J680UP | (2)    | 500                |
|                      | 100               | 10             | 10.2 | G          | 400                                            | 0.35                             | 0.08                    | EEEFK1J101P  | (2)    | 500                |
|                      | 150               | 12.5           | 13.5 | H13        | 800                                            | 0.16                             | 0.08                    | EEVFK1J151Q  | (3)    | 200                |
|                      | 220               | 12.5           | 13.5 | H13        | 800                                            | 0.16                             | 0.08                    | EEVFK1J221Q  | (3)    | 200                |
|                      | 470               | 16             | 16.5 | J16        | 1410                                           | 0.082                            | 0.08                    | EEVFK1J471M  | (3)    | 125                |
|                      | 680               | 18             | 16.5 | K16        | 1690                                           | 0.08                             | 0.08                    | EEVFK1J681M  | (3)    | 125                |
| 80                   | 3.3               | 5              | 5.8  | C          | 25                                             | 5.00                             | 0.08                    | EEEFK1K3R3R  | (1)    | 1000               |
|                      | 4.7               | 6.3            | 5.8  | D          | 40                                             | 3.00                             | 0.08                    | EEEFK1K4R7P  | (1)    | 1000               |
|                      | 10                | 6.3            | 7.7  | D8         | 60                                             | 2.40                             | 0.08                    | EEEFK1K100XP | (1)    | 900                |
|                      |                   | 8              | 6.2  | E          | 60                                             | 2.40                             | 0.08                    | EEEFK1K100P  | (2)    | 1000               |
|                      | 22                | 8              | 10.2 | F          | 130                                            | 1.30                             | 0.08                    | EEEFK1K220P  | (2)    | 500                |
|                      | 33                | 8              | 10.2 | F          | 130                                            | 1.30                             | 0.08                    | EEEFK1K330P  | (2)    | 500                |
|                      | 47                | 10             | 10.2 | G          | 200                                            | 0.70                             | 0.08                    | EEEFK1K470P  | (2)    | 500                |
|                      | 68                | 12.5           | 13.5 | H13        | 500                                            | 0.32                             | 0.08                    | EEVFK1K680Q  | (3)    | 200                |
|                      | 100               | 12.5           | 13.5 | H13        | 500                                            | 0.32                             | 0.08                    | EEVFK1K101Q  | (3)    | 200                |
|                      | 150               | 12.5           | 13.5 | H13        | 500                                            | 0.32                             | 0.08                    | EEVFK1K151Q  | (3)    | 200                |
|                      | 330               | 16             | 16.5 | J16        | 793                                            | 0.17                             | 0.08                    | EEVFK1K331M  | (3)    | 125                |
|                      | 470               | 18             | 16.5 | K16        | 917                                            | 0.153                            | 0.08                    | EEVFK1K471M  | (3)    | 125                |

\* Size code( ) : Miniaturization product

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

· When requesting vibration-proof product, please put the last "V" instead to "P"

**Characteristics list**

Endurance : 105 °C 2000 h (≥ ϕ12.5 : 5000 h)

| Rated voltage (V.DC) | Cap. (±20 %) (μF) | Case size (mm) |      | Size* code | Specification                                  |                                  |                         | Part No.    | Reflow | Min. Packaging Q'ty |
|----------------------|-------------------|----------------|------|------------|------------------------------------------------|----------------------------------|-------------------------|-------------|--------|---------------------|
|                      |                   | ϕD             | L    |            | Ripple current (100 kHz) (+105 °C) (mA r.m.s.) | Impedance (100 kHz) (+20 °C) (Ω) | tan δ (120 Hz) (+20 °C) |             |        | Taping (pcs)        |
| 100                  | 22                | 8              | 10.2 | F          | 130                                            | 1.30                             | 0.07                    | EEEFK2A220P | (2)    | 500                 |
|                      | 33                | 10             | 10.2 | G          | 200                                            | 0.70                             | 0.07                    | EEEFK2A330P | (2)    | 500                 |
|                      | 47                | 12.5           | 13.5 | H13        | 500                                            | 0.32                             | 0.07                    | EEVFK2A470Q | (3)    | 200                 |
|                      | 68                | 12.5           | 13.5 | H13        | 500                                            | 0.32                             | 0.07                    | EEVFK2A680Q | (3)    | 200                 |
|                      | 100               | 16             | 16.5 | J16        | 793                                            | 0.17                             | 0.07                    | EEVFK2A101M | (3)    | 125                 |
|                      | 150               | 16             | 16.5 | J16        | 793                                            | 0.17                             | 0.07                    | EEVFK2A151M | (3)    | 125                 |
|                      | 220               | 18             | 16.5 | K16        | 917                                            | 0.153                            | 0.07                    | EEVFK2A221M | (3)    | 125                 |
|                      | 330               | 18             | 16.5 | K16        | 917                                            | 0.153                            | 0.07                    | EEVFK2A331M | (3)    | 125                 |

\* Size code( ) : Miniaturization product

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

**Characteristics list**

Endurance : 105 °C 5000 h

| Rated voltage (V.DC) | Cap. (±20 %) (μF) | Case size (mm) |      | Size* code | Specification                                  |                                  |                         | Part No.     | Reflow | Min. Packaging Q'ty |
|----------------------|-------------------|----------------|------|------------|------------------------------------------------|----------------------------------|-------------------------|--------------|--------|---------------------|
|                      |                   | ϕD             | L    |            | Ripple current (100 kHz) (+105 °C) (mA r.m.s.) | Impedance (100 kHz) (+20 °C) (Ω) | tan δ (120 Hz) (+20 °C) |              |        | Taping (pcs)        |
| 6.3                  | 470               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.26                    | EEEFK0J471GP | (2)    | 500                 |
|                      | 1000              | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.26                    | EEEFK0J102GP | (2)    | 500                 |
|                      | 1500              | 10             | 10.2 | G          | 850                                            | 0.08                             | 0.26                    | EEEFK0J152GP | (2)    | 500                 |
| 10                   | 330               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.19                    | EEEFK1A331GP | (2)    | 500                 |
|                      | 470               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.19                    | EEEFK1A471GP | (2)    | 500                 |
|                      | 680               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.19                    | EEEFK1A681GP | (2)    | 500                 |
|                      | 1000              | 10             | 10.2 | G          | 850                                            | 0.08                             | 0.19                    | EEEFK1A102GP | (2)    | 500                 |
| 16                   | 330               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.16                    | EEEFK1C331GP | (2)    | 500                 |
|                      | 470               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.16                    | EEEFK1C471GP | (2)    | 500                 |
|                      | 680               | 10             | 10.2 | G          | 850                                            | 0.08                             | 0.16                    | EEEFK1C681GP | (2)    | 500                 |
| 25                   | 150               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.14                    | EEEFK1E151GP | (2)    | 500                 |
|                      | 220               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.14                    | EEEFK1E221GP | (2)    | 500                 |
|                      | 330               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.14                    | EEEFK1E331GP | (2)    | 500                 |
|                      | 470               | 10             | 10.2 | G          | 850                                            | 0.08                             | 0.14                    | EEEFK1E471GP | (2)    | 500                 |
| 35                   | 100               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.12                    | EEEFK1V101GP | (2)    | 500                 |
|                      | 150               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.12                    | EEEFK1V151GP | (2)    | 500                 |
|                      | 220               | 8              | 10.2 | F          | 600                                            | 0.16                             | 0.12                    | EEEFK1V221GP | (2)    | 500                 |
|                      | 330               | 10             | 10.2 | G          | 850                                            | 0.08                             | 0.12                    | EEEFK1V331GP | (2)    | 500                 |
| 50                   | 100               | 8              | 10.2 | F          | 350                                            | 0.34                             | 0.10                    | EEEFK1H101GP | (2)    | 500                 |
|                      | 150               | 10             | 10.2 | G          | 670                                            | 0.18                             | 0.10                    | EEEFK1H151GP | (2)    | 500                 |
|                      | 220               | 10             | 10.2 | G          | 670                                            | 0.18                             | 0.10                    | EEEFK1H221GP | (2)    | 500                 |

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

· When requesting vibration-proof product, please put the last "V" instead to "P"

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## Panasonic:

[EEV-FK1V102M](#) [EEV-FK2A151M](#) [EEV-FK1H681M](#) [EEV-FK1J151Q](#) [EEE-FK1V100AR](#) [EEV-FK0J682M](#) [EEE-FK1E471V](#) [EEE-FK1J680UP](#) [EEV-FK1J681V](#) [EEE-FK1C681V](#) [EEV-FK1K101Q](#) [EEE-FK1H101GP](#) [EEE-FK1H221A](#) [EEE-FKE101XAP](#) [EEE-FKA330UAR](#) [EEE-FKC220UAR](#) [EEE-FKC470UAR](#) [EEE-FKE330UAR](#) [EEE-FKJ101UAR](#) [EEE-FKJ331XAP](#) [EEE-FKJ470UAR](#) [EEE-FKV100UAR](#) [EEE-FKV680XAP](#) [EEE-FK0J101AP](#) [EEE-FK0J102AP](#) [EEE-FK0J152AP](#) [EEE-FK0J220AR](#) [EEE-FK0J221AP](#) [EEE-FK0J331AP](#) [EEE-FK0J470AR](#) [EEE-FK0J471AP](#) [EEE-FK1A151AP](#) [EEE-FK1A220AR](#) [EEE-FK1A221AP](#) [EEE-FK1A330AR](#) [EEE-FK1A331AP](#) [EEE-FK1A471AP](#) [EEE-FK1A681AP](#) [EEE-FK1C220AR](#) [EEE-FK1C221AP](#) [EEE-FK1C331AP](#) [EEE-FK1C470AP](#) [EEE-FK1C471AP](#) [EEE-FK1C680AP](#) [EEE-FK1E100AR](#) [EEE-FK1E101AP](#) [EEE-FK1E151AP](#) [EEE-FK1E220AR](#) [EEE-FK1E221AP](#) [EEE-FK1E330AP](#) [EEE-FK1E331AP](#) [EEE-FK1E470AP](#) [EEE-FK1E680AP](#) [EEE-FK1V151AP](#) [EEE-FK1V220AR](#) [EEE-FK1V330AP](#) [EEE-FK1V4R7AR](#) [EEE-FK0J101P](#) [EEE-FK0J101UR](#) [EEE-FK0J102P](#) [EEE-FK0J152P](#) [EEE-FK0J220R](#) [EEE-FK0J221P](#) [EEE-FK0J331P](#) [EEE-FK0J331XP](#) [EEE-FK0J470R](#) [EEE-FK0J470UR](#) [EEE-FK0J471P](#) [EEE-FK1A102P](#) [EEE-FK1A151P](#) [EEE-FK1A220R](#) [EEE-FK1A221P](#) [EEE-FK1A221XP](#) [EEE-FK1A330R](#) [EEE-FK1A330UR](#) [EEE-FK1A331P](#) [EEE-FK1A471P](#) [EEE-FK1A681P](#) [EEE-FK1C100R](#) [EEE-FK1C101P](#) [EEE-FK1C151XP](#) [EEE-FK1C220R](#) [EEE-FK1C220UR](#) [EEE-FK1C221P](#) [EEE-FK1C221XP](#) [EEE-FK1C331P](#) [EEE-FK1C470P](#) [EEE-FK1C470UR](#) [EEE-FK1C471P](#) [EEE-FK1C680P](#) [EEE-FK1C681P](#) [EEE-FK1E100R](#) [EEE-FK1E101P](#) [EEE-FK1E101XP](#) [EEE-FK1E151P](#) [EEE-FK1E220R](#) [EEE-FK1E221P](#) [EEE-FK1E330P](#) [EEE-FK1E330UR](#) [EEE-FK1E331P](#)