

# RC

Chip type, Wide Temperature Range Series



SC → RC  
Wide temp.



- Wide operating temperature range of -55 ~ +105°C
- Designed for surface mounting on high density PC board
- Applicable to automatic insertion machine using carrier tape
- Complied to the RoHS directive

| Item  | Characteristics  |                                    |      |      |      |      |      |  |  |  |  |  |  |
|---|--|------------------------------------|------|------|------|------|------|--|--|--|--|--|--|
| <b>Operating temperature range</b>  | -55 ~ +105°C   |                                    |      |      |      |      |      |  |  |  |  |  |  |
| <b>Leakage current max.</b>   | $I = 0.01CV$ or $3\mu A$ whichever is greater (after 2 minutes)  |                                    |      |      |      |      |      |  |  |  |  |  |  |
| <b>Capacitance tolerance</b>  | $\pm 20\%$ at 120Hz, 20°C  |                                    |      |      |      |      |      |  |  |  |  |  |  |
| <b>Dissipation factor max.<br/>(at 120Hz, 20°C)</b>                                       | WV   | 6.3                                | 10   | 16   | 25   | 35   | 50   |  |  |  |  |  |  |
|   | $\tan\delta$   | 0.27                               | 0.23 | 0.19 | 0.15 | 0.13 | 0.11 |  |  |  |  |  |  |
| <b>Low temperature characteristics<br/>(Impedance ratio at 120Hz)</b>                     | WV   | 6.3                                | 10   | 16   | 25   | 35   | 50   |  |  |  |  |  |  |
|   | Z-25°C/Z+20°C  | 3                                  | 3    | 2    | 2    | 2    | 2    |  |  |  |  |  |  |
|   | Z-55°C/Z+20°C  | 8                                  | 5    | 4    | 3    | 3    | 3    |  |  |  |  |  |  |
| <b>Load life<br/>(after application of the rated<br/>voltage for 1000 hours at 105°C)</b> | Leakage current  | Less than specified value          |      |      |      |      |      |  |  |  |  |  |  |
|   | Capacitance change   | Within $\pm 25\%$ of initial value |      |      |      |      |      |  |  |  |  |  |  |
|   | $\tan\delta$   | Less than 200% of specified value  |      |      |      |      |      |  |  |  |  |  |  |
| <b>Shelf life (at 105°C)</b>  | After 1000 hours no load test, leakage current, capacitance and $\tan\delta$ are same as load life value. The measurement shall be performed at 20°C by the KS C IEC 60384 - 4 |                                    |      |      |      |      |      |  |  |  |  |  |  |
| <b>Resistance to soldering heat</b>   | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 250°C for 10 seconds.  |                                    |      |      |      |      |      |  |  |  |  |  |  |
|   | Leakage current  | Less than specified value          |      |      |      |      |      |  |  |  |  |  |  |
|   | Capacitance change   | Within $\pm 10\%$ of initial value |      |      |      |      |      |  |  |  |  |  |  |
|   | $\tan\delta$   | Less than specified value          |      |      |      |      |      |  |  |  |  |  |  |

## ● DRAWING (See page 69)

Unit : mm

-Series code of RC is "F"

## ● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

| $\mu F$ | WV          | 6.3         | 10          | 16         | 25         | 35         | 50         |
|---------|-------------|-------------|-------------|------------|------------|------------|------------|
| 1.0     |             |             |             |            |            |            | 4×5.3 7    |
| 2.2     |             |             |             |            |            |            | 4×5.3 11   |
| 3.3     |             |             |             |            |            |            | 4×5.3 13   |
| 4.7     |             |             |             |            | 4×5.3 13   | 4×5.3 14   | 5×5.3 18   |
| 10      |             |             |             | 4×5.3 17   | 5×5.3 23   | 5×5.3 24   | 6.3×5.3 31 |
| 22      | 4×5.3 22    | 5×5.3 27    | 5×5.3 30    | 6.3×5.3 39 | 6.3×5.3 42 | 6.3×5.8 45 |            |
| 33      | 5×5.3 31    | 5×5.3 33    | 6.3×5.3 43  | 6.3×5.3 48 | 6.3×5.8 52 | 6.3×7.7 60 |            |
| 47      | 5×5.3 36    | 6.3×5.3 46  | 6.3×5.3 51  | 6.3×5.8 59 | 6.3×5.8 63 | 6.3×7.7 63 |            |
| 100     | 6.3×5.3 50  | 6.3×5.8 64  | 6.3×5.8 64  | 6.3×7.7 91 | 8×10 296   | 10×10 295  |            |
| 220     | 6.3×7.7 86  | 6.3×7.7 105 | 6.3×7.7 105 | 8×10 340   | 10×10 435  |            |            |
| 330     | 6.3×7.7 105 | 8×10 305    | 8×10 340    | 10×10 360  |            |            |            |
| 470     | 8×10 330    | 10×10 340   | 10×10 470   |            |            |            |            |
| 1000    | 10×10 475   |             |             |            |            |            |            |

Ripple current (mA rms) at 105°C, 120Hz  
Case size ØD × L (mm)

## ● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

| Frequency   | 50Hz | 120Hz | 300Hz | 1kHz | 10kHz |
|-------------|------|-------|-------|------|-------|
| Coefficient | 0.70 | 1.00  | 1.17  | 1.36 | 1.50  |