

## Miniature Aluminum Electrolytic Capacitors RPK series

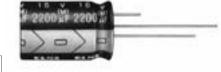
Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

**RKD** 

For vibration

- Guaranteed 5000 hours at 125°C. (4000 hours: 63V to 80V φ16x20L)
- · Best-suited to smoothing circuits and control circuits for industrial equipment power supplies of which long life and high reliability are required.
- · NC terminal added items are lineup for vibration resistance. (30G guaranteed: 20mmL or less)

• Environmental : GREEN CAP™ , RoHS compliance.



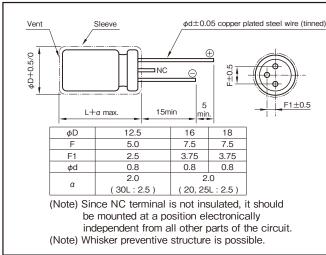
Marking color: White print on a black sleeve

### Specifications

| •                                  |  |                  |                  |   |               |              |      |      |      |      |         |  |  |
|------------------------------------|--|------------------|------------------|---|---------------|--------------|------|------|------|------|---------|--|--|
| Item                               | Performance  |                  |                  |   |               |              |      |      |      |      |         |  |  |
| Category temperature range (°C)    | -40 to +125  |                  |                  |   |               |              |      |      |      |      |         |  |  |
| Tolerance at rated capacitance (%) |  | ±20 (20°C,120H   |                  |   |               |              |      |      |      |      |         |  |  |
| Leakage current (μA)<br>(max.)     | 0.01CV or 3 whichever is larger (after 2 minutes) C: Rated capacitance (μF), V: Rated voltage (V) (20)                   |                  |                  |   |               |              |      |      |      |      |         |  |  |
| Tangent of loss angle              |  | Rated vol        | 10               | 16  | 25            | 35           | 50   | 63   | 80   |      |         |  |  |
| (tanδ)                             |  | tanδ (           | max.)            | 0.20  | 0.16          | 0.14         | 0.12 | 0.10 | 0.10 | 0.08 |         |  |  |
|                                    | 0.02 is added to every 1000μF increase over 1000μF. (20°C,12   |                  |                  |   |               |              |      |      |      |      |         |  |  |
| Characteristics at high            |  | Rated vol        | Itage (V)        | 10  | 16            | 25           | 35   | 50   | 63   | 80   | 7       |  |  |
| and low temperature                | Impedan  | ce ratio (max.)  | Z-40°C/Z+20°C    | 4   | 3             | 3            | 3    | 3    | 3    | 3    |         |  |  |
|                                    |  |                  |                  |   |               |              |      |      |      |      | (120Hz) |  |  |
|                                    |  | Test             | time             | 5000 hours (4000 hours: 63V to 80V - φ16x20L) |               |              |      |      |      |      |         |  |  |
| Endurance (125°C)                  |  | Leakage          | current          | The initial specified value or less           |               |              |      |      |      |      |         |  |  |
| (Applied ripple current)           | Pe   | ercentage of cap | pacitance change | Within ±30% of initial value                  |               |              |      |      |      |      |         |  |  |
|                                    | Tangent of the loss angle 300% or less of the initial specified value  |                  |                  |   |               |              |      |      |      |      |         |  |  |
| Shelf life (125℃)                  | Test time: 1000hours; other items are same as the endurance. Voltage application treatment: According to JIS C5101-4 4.1 |                  |                  |   |               |              |      |      |      |      |         |  |  |
| Applicable standards               |  |                  |                  | JIS C5101                                     | - 1, - 4 (IEC | 60384 - 1, - | 4)   |      |      |      |         |  |  |

RPK

#### **Outline Drawing**



#### Coefficient of Frequency for Rated Ripple Current

| Rated Frequency (Hz) capacitance (µF) | 50 · 60 | 120  | 1k   | 10k • 100k |
|---------------------------------------|---------|------|------|------------|
| 470 to 1000                           | 0.70    | 0.75 | 0.90 | 1          |
| 1200 to 6800                          | 0.80    | 0.85 | 0.95 | 1          |

| Product code system : 16V2200µF (*For general product) |                |                     |          |                 |              |                                     |                 |  |  |  |
|--|----------------|---------------------|----------|-----------------|--------------|-------------------------------------|-----------------|--|--|--|
| RS*  | RPK            | 222                 | М        | 1E              | J25          | 300                                 | DT              |  |  |  |
| Category code  | Series<br>code | capacitance<br>code | Cap tol. | Voltage<br>code | Size<br>code | Lead-forming<br>and<br>packing code | Additional code |  |  |  |

- If it is whisker preventive structure, should change "T" into "G".
  For details, refer to the various "Product Code System" pages.
- · Lead-forming and packing code on this page are for lead long and standard packing products.

For standard packing, please refer to the "PACKING" page.



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#### Standard Ratings

| Rated voltage<br>(V) |                   | (1L) |           |                         | (1E)              |      |           | (1T)                    |                        | 35 (1G) |           |                         |                        |      |           |                         |
|----------------------|-------------------|------|-----------|-------------------------|-------------------|------|-----------|-------------------------|------------------------|---------|-----------|-------------------------|------------------------|------|-----------|-------------------------|
| Rated Item           | Case              | Size | ESR       | Rated ripple<br>current | Case              | Size | ESR       | Rated ripple<br>current | Case                   | Size    | ESR       | Rated ripple<br>current | Case                   | Size | ESR       | Rated ripple<br>current |
| capacitance<br>(µF)  | $\phi$ D × L (mm) | code | ( Ω max.) | (mArms)                 | $\phi$ D × L (mm) | code | ( Ω max.) | (mArms)                 | $\phi D \times L (mm)$ | code    | ( Ω max.) | (mArms)                 | $\phi D \times L (mm)$ | code | ( Ω max.) | (mArms)                 |
| 470                  | _                 | _    | _         | _                       | _                 | _    | _         | _                       | _                      | _       | _         | _                       | 12.5×20                | G20  | 0.040     | 1820                    |
|                      |                   |      |           |                         | 12.5×20           | G20  | 0.040     | 1820                    | 12.5×20                | G20     | 0.040     | 1820                    | 12.5×25                | G25  | 0.032     | 2400                    |
| 1000                 | 12.5×15           | G15  | 0.059     | 1380                    |                   |      |           |                         | 12.5×25                | G25     | 0.032     | 2400                    | 16×25                  | J25  | 0.024     | 3100                    |
|                      |                   |      |           |                         | 16×16             | J16  | 0.044     | 1930                    | 16×16                  | J16     | 0.044     | 1930                    | 18×20                  | K20  | 0.029     | 2490                    |
| 1200                 | _                 | _    | _         | _                       | _                 | _    | _         | _                       | 12.5×20                | G20     | 0.040     | 1820                    | 12.5×30                | G30  | 0.029     | 2560                    |
| 1200                 |                   |      |           |                         |                   |      |           |                         | 12.5 \ 20              | U20     | 0.040     | 1020                    | 16×20                  | J20  | 0.032     | 2280                    |
|                      |                   | _    | _         |                         |                   |      |           | _                       | _                      | _       |           |                         | 12.5×35                | G35  | 0.023     | 2970                    |
| 1500                 | _                 |      |           | _                       | -                 | -    | _         |                         |                        |         | -         | _                       | 16×31.5                | J31  | 0.020     | 3160                    |
|                      |                   |      |           |                         |                   |      |           |                         |                        |         |           |                         | 18×25                  | K25  | 0.022     | 3200                    |
| 1800                 | _                 | _    | _   _     | _                       | -                 | -    | _         | _                       | 12.5×25                | G25     | 0.032     | 2400                    | 12.5×40                | G40  | 0.020     | 3600                    |
| 1800                 |                   |      |           |                         |                   |      |           |                         | 16×20                  | J20     | 0.032     | 2280                    | 16×25                  | J25  | 0.024     | 3100                    |
|                      | 12.5×25           | G25  | 0.032     | 2400                    | 12.5×25           | G25  | 0.032     | 2400                    | 12.5×30                | G30     | 0.029     | 2560                    | 16×31.5                | J31  | 0.020     | 3160                    |
| 2200                 | 16×20             | J20  | 0.032     | 2280                    | 16×25             | J25  | 0.024     | 3100                    | 16×25                  | J25     | 0.024     | 3100                    | 16×35.5                | J35  | 0.019     | 3590                    |
|                      | 18×16             | K16  | 0.041     | 2170                    | 18×20             | K20  | 0.029     | 2490                    | 18×20                  | K20     | 0.029     | 2490                    | 18×25                  | K25  | 0.022     | 3200                    |
|                      |                   | _    | -   -     | _                       |                   | _    | _         | _                       | 12.5×35                | G35     | 0.023     | 2970                    | 16×35.5                | J35  | 0.019     | 3590                    |
| 2700                 | _                 |      |           |                         | _                 |      |           |                         | 16×25                  | J25     | 0.024     | 3100                    |                        |      |           |                         |
|                      |                   |      |           |                         |                   |      |           |                         | 18×20                  | K20     | 0.029     | 2490                    | 18×31.5                | K31  | 0.018     | 3410                    |
| 3300                 | 16×25             | J25  | 0.024     | 3100                    | 16×31.5           | J31  | 0.020     | 3160                    | 12.5×40                | G40     | 0.020     | 3600                    | 16×40                  | J40  | 0.017     | 4300                    |
| 3300                 | 18×20             | K20  | 0.029     | 2490                    | 18×25             | K25  | 0.022     | 3200                    | 16×31.5                | J31     | 0.020     | 3160                    | 18×35.5                | K35  | 0.017     | 4200                    |
| 3900                 | _                 | _    | _         | _                       | _                 | _    | _         | _                       | 16×35.5                | J35     | 0.019     | 3590                    | _                      | _    | _         | _                       |
| 3900                 |                   | _    | -         |                         |                   | _    |           |                         | 18×25                  | K25     | 0.022     | 3200                    |                        |      |           |                         |
| 4700                 | 16×31.5           | J31  | 0.020     | 3160                    | 16×35.5           | J35  | 0.019     | 3590                    | 18×35.5                | K35     | 0.017     | 4200                    | 18×40                  | K40  | 0.016     | 4600                    |
| 4700                 | 18×25             | K25  | 0.022     | 3200                    | 18×31.5           | K31  | 0.018     | 3410                    | 10 × 00.0              | NOO     | 0.017     | 4200                    | 10 / 40                | 1140 | 0.010     | 4000                    |
| 5600                 | _                 | _    |           | _                       | _                 | _    | _         | _                       | 16×40                  | J40     | 0.017     | 4300                    | _                      | _    | _         |                         |
|                      |                   |      |           |                         |                   |      |           |                         | 18×35.5                | K35     | 0.017     | 4200                    |                        |      |           |                         |
| 6800                 | _                 | _    | _         | _                       | _                 | _    | _         | _                       | 18×40                  | K40     | 0.016     | 4600                    | _                      | _    | _         | _                       |

| Rated voltage<br>(V) |                   | 50                                      | (1U)      |         |                        | 63   | (4E)                    |         | 80 (1R)                |      |                         |         |  |
|----------------------|-------------------|---|-----------|---------|------------------------|------|-------------------------|---------|------------------------|------|-------------------------|---------|--|
| Rated Item           | Case              | Case Size ESR Rated ripple current Case |           | Case    | Size ESR               |      | Rated ripple<br>current |         |                        | ESR  | Rated ripple<br>current |         |  |
| capacitance<br>(µF)  | $\phi$ D × L (mm) | code                                    | ( Ω max.) | (mArms) | $\phi D \times L (mm)$ | code | ( Ω max.)               | (mArms) | $\phi D \times L (mm)$ | code | ( Ω max.)               | (mArms) |  |
| 470                  | 12.5×20           | G20                                     | 0.070     | 1500    | _                      | _    | _                       | _       | 16×25                  | J25  | 0.116                   | 1500    |  |
| 560                  | -                 | _                                       | _         | _       | _                      | _    | _                       | _       | 18×25                  | K25  | 0.100                   | 1600    |  |
| 820                  | 12.5×30           | G30                                     | 0.038     | 2150    | 16×31.5                | J31  | 0.080                   | 1910    | 18×35.5                | K35  | 0.062                   | 2180    |  |
| 1000                 | 16×25             | J25                                     | 0.031     | 2620    | 16×35.5                | J35  | 0.066                   | 2110    | 18×40                  | K40  | 0.051                   | 2470    |  |
| 1800                 | 18×31.5           | K31                                     | 0.025     | 3140    | _                      | _    | _                       | _       | _                      | _    | _                       | _       |  |
| 2200                 | 18×35.5           | K35                                     | 0.022     | 3510    | _                      | _    | _                       | _       | _                      | _    | _                       | _       |  |

(Note) Rated ripple current : 125°C , 100kHz ; ESR : 20°C , 100kHz