

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

**PJ series** Low Impedance, For Switching Power Supplies



- Low impedance and high reliability withstanding 5000 hours load life at +105°C (3000 / 2000 hours for smaller case sizes as specified below).
- Capacitance ranges available based on the numerical values in E12 series under JIS.
- Ideally suited for use of switching power supplies.
- Adapted to the RoHS directive (2002/95/EC).

**PJ**

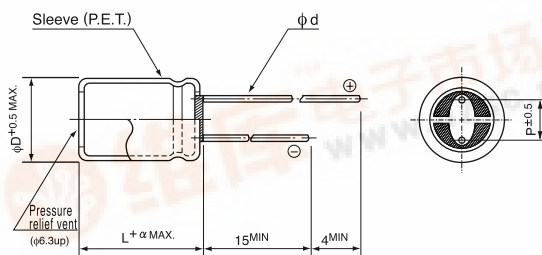
Smaller  
PS



## Specifications

| Item                                                                        | Performance Characteristics                                                                                                                                                                                                                                                          |                                                                                                                         |          |      |         |          |                    |                                                                                                      |                                         |           |       |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------|------|---------|----------|--------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------|-------|
| Category Temperature Range                                                  | -55 ~ +105°C (6.3 ~ 100V), -40 ~ +105°C (160 ~ 400V), -25 ~ +105°C (450V)                                                                                                                                                                                                            |                                                                                                                         |          |      |         |          |                    |                                                                                                      |                                         |           |       |
| Rated Voltage Range                                                         | 6.3 ~ 450V                                                                                                                                                                                                                                                                           |                                                                                                                         |          |      |         |          |                    |                                                                                                      |                                         |           |       |
| Rated Capacitance Range                                                     | 0.47 ~ 15000μF                                                                                                                                                                                                                                                                       |                                                                                                                         |          |      |         |          |                    |                                                                                                      |                                         |           |       |
| Capacitance Tolerance                                                       | ±20% at 120Hz, 20°C                                                                                                                                                                                                                                                                  |                                                                                                                         |          |      |         |          |                    |                                                                                                      |                                         |           |       |
| Leakage Current                                                             | Rated Voltage (V)                                                                                                                                                                                                                                                                    | 6.3 ~ 100                                                                                                               |          |      |         |          |                    | 160 ~ 450                                                                                            |                                         |           |       |
|                                                                             | Leakage current                                                                                                                                                                                                                                                                      | After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. |          |      |         |          |                    | CV ≤ 1000 : I = 0.1CV+40 (μA) max. (1 minute's)<br>CV > 1000 : I = 0.04CV+100 (μA) max. (1 minute's) |                                         |           |       |
| tan δ                                                                       | 120Hz, 20°C                                                                                                                                                                                                                                                                          |                                                                                                                         |          |      |         |          |                    |                                                                                                      |                                         |           |       |
|                                                                             | Rated Voltage (V)                                                                                                                                                                                                                                                                    | 6.3                                                                                                                     | 10       | 16   | 25      | 35       | 50                 | 63 ~ 100                                                                                             | 160 ~ 350                               | 400 ~ 450 |       |
|                                                                             | tan δ (MAX.)                                                                                                                                                                                                                                                                         | 0.22                                                                                                                    | 0.19     | 0.16 | 0.14    | 0.12     | 0.10               | 0.08                                                                                                 | 0.20                                    | 0.25      |       |
| For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. |                                                                                                                                                                                                                                                                                      |                                                                                                                         |          |      |         |          |                    |                                                                                                      |                                         |           |       |
| Stability at Low Temperature                                                | Rated voltage (V)                                                                                                                                                                                                                                                                    |                                                                                                                         | 6.3 · 10 | 16   | 25 · 35 | 50 ~ 100 | 160 ~ 200          | 250                                                                                                  | 315 ~ 350                               | 400       | 450   |
|                                                                             | Impedance ratio (MAX.)                                                                                                                                                                                                                                                               | Z-25°C / Z+20°C                                                                                                         | —        | —    | —       | —        | —                  | —                                                                                                    | —                                       | —         | 15    |
|                                                                             |                                                                                                                                                                                                                                                                                      | Z-40°C / Z+20°C                                                                                                         | —        | —    | —       | —        | 4                  | 6                                                                                                    | 8                                       | 10        | —     |
|                                                                             |                                                                                                                                                                                                                                                                                      | Z-55°C / Z+20°C                                                                                                         | 4        | 3    | 3       | 2        | —                  | —                                                                                                    | —                                       | —         | 120Hz |
| Endurance                                                                   | After an application of D.C. bias voltage plus the rated ripple current for 5000 hours (2000 hours for φD = 5 and 6.3, 3000 hours for φD = 8) at 105°C the peak voltage shall not exceed the rated D.C. voltage, capacitors meet the characteristic requirements shown on the right. |                                                                                                                         |          |      |         |          | Capacitance change |                                                                                                      | Within ±20% of initial value            |           |       |
|                                                                             |                                                                                                                                                                                                                                                                                      |                                                                                                                         |          |      |         |          | tan δ              |                                                                                                      | 200% or less of initial specified value |           |       |
|                                                                             |                                                                                                                                                                                                                                                                                      |                                                                                                                         |          |      |         |          | Leakage current    |                                                                                                      | Initial specified value or less         |           |       |
| Shelf Life                                                                  | After storing the capacitors under no load at 105°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the specified value for endurance characteristics listed above.                                                  |                                                                                                                         |          |      |         |          | Capacitance change |                                                                                                      | Within ±20% of initial value            |           |       |
|                                                                             |                                                                                                                                                                                                                                                                                      |                                                                                                                         |          |      |         |          | tan δ              |                                                                                                      | 150% or less of initial specified value |           |       |
|                                                                             |                                                                                                                                                                                                                                                                                      |                                                                                                                         |          |      |         |          | Leakage current    |                                                                                                      | Initial specified value or less         |           |       |
| Marking                                                                     | Printed with white color letter on dark brown sleeve.                                                                                                                                                                                                                                |                                                                                                                         |          |      |         |          |                    |                                                                                                      |                                         |           |       |

## Radial Lead Type



|   |               |
|---|---------------|
| α | (φD < 10) 1.0 |
|   | (φD ≥ 10) 1.5 |

|    | φD  | 5   | 6.3 | 8   | 10   | 12.5 | 16  | 18 |
|----|-----|-----|-----|-----|------|------|-----|----|
| P  | 2.0 | 2.5 | 3.5 | 5.0 | 5.0  | 7.5  | 7.5 |    |
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6* | 0.8  | 0.8 |    |

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φd = 0.8mm.

- Please refer to page 21 about the end seal configuration.

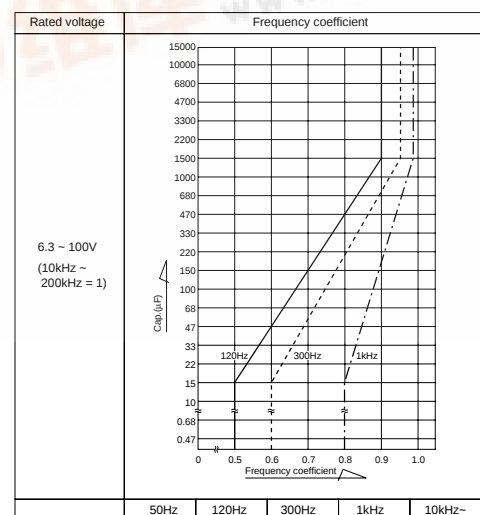
## Type numbering system (Example : 25V 470μF)

|                              |   |   |   |   |   |   |   |   |    |    |    |
|------------------------------|---|---|---|---|---|---|---|---|----|----|----|
| 1                            | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| U                            | P | J | 1 | E | 4 | 7 | 1 | M | P  | D  |    |
| Configuration ※              |   |   |   |   |   |   |   |   |    |    |    |
| Capacitance tolerance (±20%) |   |   |   |   |   |   |   |   |    |    |    |
| Rated Capacitance (470μF)    |   |   |   |   |   |   |   |   |    |    |    |
| Rated voltage (25V)          |   |   |   |   |   |   |   |   |    |    |    |
| Series name                  |   |   |   |   |   |   |   |   |    |    |    |
| Type                         |   |   |   |   |   |   |   |   |    |    |    |

| Type        | Code |
|-------------|------|
| Small Dia   | —    |
| Low Profile | 6    |
| Size code   |      |

| Configuration |                                        |
|---------------|----------------------------------------|
| φD            | Pb-free leadwire<br>Pb-free PET sleeve |
| 5             | DD                                     |
| 6.3           | ED                                     |
| 8 ~ 10        | PD                                     |
| 12.5 ~ 18     | HD                                     |

- Frequency coefficient of rated ripple current



# ALUMINUM ELECTROLYTIC CAPACITORS



PJ series

## ■Dimensions

| V (Code)<br>Size code<br>Code |     | 6.3 (0J)    |           | 10 (1A)     |           | 16 (1C)     |           | 25 (1E)     |           | 35 (1V)     |              |
|-------------------------------|-----|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|--------------|
|                               |     | —           | 6         | —           | 6         | —           | 6         | —           | 6         | —           | 6            |
| Cap. (μF)                     |     |             |           |             |           |             |           |             |           |             |              |
| 22                            | 220 |             |           |             |           |             |           |             |           | 5 × 11      |              |
| 27                            | 270 |             |           |             |           |             |           |             |           | 5 × 11      |              |
| 33                            | 330 |             |           |             |           |             |           | 5 × 11      |           | 6.3 × 11    |              |
| 39                            | 390 |             |           |             |           |             |           | 5 × 11      |           | 6.3 × 11    |              |
| 47                            | 470 |             |           |             |           | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |              |
| 56                            | 560 |             |           |             |           | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |              |
| 68                            | 680 |             |           | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |              |
| 82                            | 820 |             |           | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |              |
| 100                           | 101 | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |           | 8 × 11.5    |              |
| 120                           | 121 | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |           | 8 × 15      | 10 × 12.5    |
| 150                           | 151 | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |           | 8 × 11.5    |           | 8 × 15      | 10 × 12.5    |
| 180                           | 181 | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |           | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15      |
| 220                           | 221 | 6.3 × 11    |           | 6.3 × 15    |           | 8 × 11.5    |           | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15      |
| 270                           | 271 | 6.3 × 15    |           | 6.3 × 15    |           | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15    |
| 330                           | 331 | 6.3 × 15    |           | 8 × 11.5    |           | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15    |
| 390                           | 391 | 8 × 11.5    |           | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15 | 10 × 25     | 12.5 × 15    |
| 470                           | 471 | 8 × 15      | 10 × 12.5 | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15 | 10 × 31.5   | 16 × 15      |
| 560                           | 561 | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15 | 10 × 25     | 12.5 × 15 | 12.5 × 20   | 16 × 15      |
| 680                           | 681 | 8 × 20      | 10 × 15   | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15 | 10 × 31.5   | 16 × 15   | 12.5 × 25   | 18 × 15      |
| 820                           | 821 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15 | 10 × 25     | 12.5 × 15 | 12.5 × 20   | 16 × 15   | 12.5 × 25   | 18 × 15      |
| 1000                          | 102 | 10 × 20     | 12.5 × 15 | 10 × 20     | 12.5 × 15 | 10 × 31.5   | 16 × 15   | 12.5 × 25   | 18 × 15   | 12.5 × 31.5 | 16 × 20      |
| 1200                          | 122 | 10 × 20     | 12.5 × 15 | 10 × 25     | 12.5 × 15 | 12.5 × 20   | 16 × 15   | 12.5 × 25   | 18 × 15   | 12.5 × 35.5 | 16 × 25      |
| 1500                          | 152 | 10 × 25     | 12.5 × 15 | 10 × 31.5   | 16 × 15   | 12.5 × 25   | 18 × 15   | 12.5 × 31.5 | 16 × 20   | 12.5 × 40   | 18 × 20      |
| 1800                          | 182 | 10 × 31.5   | 16 × 15   | 12.5 × 20   | 16 × 15   | 12.5 × 31.5 | 16 × 20   | 12.5 × 35.5 | 16 × 25   | 16 × 31.5   | 18 × 25      |
| 2200                          | 222 | 10 × 31.5   | 16 × 15   | 12.5 × 25   | 18 × 15   | 12.5 × 31.5 | 16 × 20   | 12.5 × 40   | 18 × 20   | 16 × 35.5   | 18 × 31.5    |
| 2700                          | 272 | 12.5 × 25   | 18 × 15   | 12.5 × 31.5 | 16 × 20   | 12.5 × 35.5 | 16 × 25   | 16 × 31.5   | 18 × 25   | 16 × 40     | 18 × 35.5    |
| 3300                          | 332 | 12.5 × 25   | 18 × 15   | 12.5 × 35.5 | 16 × 20   | 12.5 × 40   | 18 × 20   | 16 × 35.5   | 18 × 31.5 | 18 × 40     |              |
| 3900                          | 392 | 12.5 × 31.5 | 16 × 20   | 12.5 × 40   | 18 × 20   | 16 × 31.5   | 18 × 25   | 16 × 40     | 18 × 35.5 |             |              |
| 4700                          | 472 | 12.5 × 35.5 | 18 × 20   | 16 × 31.5   | 18 × 25   | 16 × 35.5   | 18 × 31.5 | 18 × 40     |           |             |              |
| 5600                          | 562 | 12.5 × 40   | 18 × 20   | 16 × 35.5   | 18 × 25   | 16 × 40     | 18 × 35.5 |             |           |             |              |
| 6800                          | 682 | 16 × 31.5   | 18 × 25   | 16 × 35.5   | 18 × 31.5 | 18 × 35.5   |           |             |           |             |              |
| 8200                          | 822 | 16 × 35.5   | 18 × 31.5 | 16 × 40     | 18 × 35.5 | 18 × 40     |           |             |           |             |              |
| 10000                         | 103 | 16 × 40     | 18 × 31.5 | 18 × 40     |           |             |           |             |           |             |              |
| 12000                         | 123 | 18 × 35.5   |           |             |           |             |           |             |           |             |              |
| 15000                         | 153 | 18 × 40     |           |             |           |             |           |             |           |             | φ D × L (mm) |

| V (Code)<br>Size code<br>Code |     | 50 (1H)     |           | 63 (1J)     |           | 80 (1K)     |           | 100 (2A)    |              |
|-------------------------------|-----|-------------|-----------|-------------|-----------|-------------|-----------|-------------|--------------|
|                               |     | —           | 6         | —           | 6         | —           | 6         | —           | 6            |
| Cap. (μF)                     |     |             |           |             |           |             |           |             |              |
| 0.47                          | R47 | 5 × 11      |           |             |           |             |           | 5 × 11      |              |
| 0.68                          | R68 | 5 × 11      |           |             |           |             |           | 5 × 11      |              |
| 1                             | 010 | 5 × 11      |           |             |           |             |           | 5 × 11      |              |
| 1.5                           | 1R5 | 5 × 11      |           |             |           |             |           | 5 × 11      |              |
| 2.2                           | 2R2 | 5 × 11      |           |             |           |             |           | 5 × 11      |              |
| 3.3                           | 3R3 | 5 × 11      |           |             |           |             |           | 5 × 11      |              |
| 4.7                           | 4R7 | 5 × 11      |           |             |           | 5 × 11      |           | 6.3 × 11    |              |
| 6.8                           | 6R8 | 5 × 11      |           |             |           | 5 × 11      |           | 6.3 × 11    |              |
| 10                            | 100 | 5 × 11      |           | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |              |
| 12                            | 120 | 5 × 11      |           | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |              |
| 15                            | 150 | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |              |
| 18                            | 180 | 5 × 11      |           | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |              |
| 22                            | 220 | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |           | 8 × 11.5    |              |
| 27                            | 270 | 6.3 × 11    |           | 6.3 × 11    |           | 6.3 × 15    |           | 8 × 15      | 10 × 12.5    |
| 33                            | 330 | 6.3 × 11    |           | 6.3 × 15    |           | 8 × 11.5    |           | 8 × 15      | 10 × 12.5    |
| 39                            | 390 | 6.3 × 11    |           | 6.3 × 15    |           | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15      |
| 47                            | 470 | 6.3 × 15    |           | 8 × 11.5    |           | 8 × 15      | 10 × 12.5 | 10 × 20     | 12.5 × 15    |
| 56                            | 560 | 6.3 × 15    |           | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15    |
| 68                            | 680 | 8 × 11.5    |           | 8 × 15      | 10 × 12.5 | 10 × 20     | 12.5 × 15 | 10 × 25     | 12.5 × 15    |
| 82                            | 820 | 8 × 15      | 10 × 12.5 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15 | 10 × 31.5   | 16 × 15      |
| 100                           | 101 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15 | 10 × 25     | 12.5 × 15 | 10 × 31.5   | 16 × 15      |
| 120                           | 121 | 8 × 20      | 10 × 15   | 10 × 20     | 12.5 × 15 | 10 × 31.5   | 16 × 15   | 12.5 × 25   | 16 × 15      |
| 150                           | 151 | 10 × 20     | 12.5 × 15 | 10 × 25     | 12.5 × 15 | 10 × 31.5   | 16 × 15   | 12.5 × 25   | 18 × 15      |
| 180                           | 181 | 10 × 20     | 12.5 × 15 | 10 × 31.5   | 16 × 15   | 12.5 × 25   | 16 × 15   | 12.5 × 31.5 | 16 × 20      |
| 220                           | 221 | 10 × 25     | 12.5 × 15 | 12.5 × 20   | 16 × 15   | 12.5 × 31.5 | 18 × 15   | 12.5 × 35.5 | 16 × 25      |
| 270                           | 271 | 10 × 31.5   | 16 × 15   | 12.5 × 25   | 18 × 15   | 12.5 × 31.5 | 16 × 20   | 12.5 × 40   | 18 × 20      |
| 330                           | 331 | 10 × 31.5   | 16 × 15   | 12.5 × 25   | 18 × 15   | 12.5 × 35.5 | 16 × 25   | 16 × 31.5   | 18 × 25      |
| 390                           | 391 | 12.5 × 25   | 16 × 15   | 12.5 × 31.5 | 16 × 20   | 12.5 × 40   | 18 × 20   | 16 × 35.5   | 18 × 31.5    |
| 470                           | 471 | 12.5 × 25   | 18 × 15   | 12.5 × 35.5 | 16 × 25   | 16 × 31.5   | 18 × 25   | 16 × 40     | 18 × 35.5    |
| 560                           | 561 | 12.5 × 31.5 | 16 × 20   | 12.5 × 40   | 18 × 20   | 16 × 35.5   | 18 × 31.5 | 18 × 35.5   |              |
| 680                           | 681 | 12.5 × 35.5 | 16 × 20   | 16 × 31.5   | 18 × 25   | 16 × 40     | 18 × 31.5 | 18 × 40     |              |
| 820                           | 821 | 12.5 × 40   | 18 × 20   | 16 × 35.5   | 18 × 31.5 | 18 × 35.5   |           |             |              |
| 1000                          | 102 | 16 × 31.5   | 18 × 25   | 16 × 40     | 18 × 35.5 | 18 × 40     |           |             |              |
| 1200                          | 122 | 16 × 35.5   | 18 × 31.5 | 18 × 40     |           |             |           |             |              |
| 1500                          | 152 | 16 × 40     | 18 × 31.5 |             |           |             |           |             |              |
| 1800                          | 182 | 18 × 35.5   |           |             |           |             |           |             | φ D × L (mm) |

# ALUMINUM ELECTROLYTIC CAPACITORS



PJ series

## Standard ratings

| Cap. (μF) |     | V (Code)    |       | 6.3 (0J)                    |                      |                |                           |               |                             |                      |                |                           |               |  |  |
|-----------|-----|-------------|-------|-----------------------------|----------------------|----------------|---------------------------|---------------|-----------------------------|----------------------|----------------|---------------------------|---------------|--|--|
|           |     | Size code   |       | —                           |                      |                |                           |               |                             | 6                    |                |                           |               |  |  |
|           |     | Item        |       | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               |  |  |
|           |     |             |       |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |  |  |
| 100       | 101 | 5 × 11      | 1.40  | 3.50                        | 150                  | 99             |                           |               |                             |                      |                |                           |               |  |  |
| 120       | 121 | 5 × 11      | 1.10  | 2.80                        | 175                  | 115            |                           |               |                             |                      |                |                           |               |  |  |
| 150       | 151 | 6.3 × 11    | 0.78  | 2.10                        | 225                  | 155            |                           |               |                             |                      |                |                           |               |  |  |
| 180       | 181 | 6.3 × 11    | 0.60  | 1.50                        | 250                  | 175            |                           |               |                             |                      |                |                           |               |  |  |
| 220       | 221 | 6.3 × 11    | 0.48  | 1.20                        | 285                  | 205            |                           |               |                             |                      |                |                           |               |  |  |
| 270       | 271 | 6.3 × 15    | 0.39  | 1.00                        | 370                  | 275            |                           |               |                             |                      |                |                           |               |  |  |
| 330       | 331 | 6.3 × 15    | 0.32  | 0.80                        | 405                  | 310            |                           |               |                             |                      |                |                           |               |  |  |
| 390       | 391 | 8 × 11.5    | 0.27  | 0.68                        | 445                  | 345            |                           |               |                             |                      |                |                           |               |  |  |
| 470       | 471 | 8 × 15      | 0.22  | 0.55                        | 550                  | 435            | 10 × 12.5                 | 0.23          | 0.58                        | 575                  | 455            |                           |               |  |  |
| 560       | 561 | 8 × 15      | 0.19  | 0.48                        | 595                  | 480            | 10 × 12.5                 | 0.21          | 0.53                        | 600                  | 485            |                           |               |  |  |
| 680       | 681 | 8 × 20      | 0.16  | 0.40                        | 730                  | 605            | 10 × 15                   | 0.18          | 0.45                        | 700                  | 580            |                           |               |  |  |
| 820       | 821 | 8 × 20      | 0.13  | 0.33                        | 795                  | 670            | 10 × 15                   | 0.15          | 0.38                        | 750                  | 635            |                           |               |  |  |
| 1000      | 102 | 10 × 20     | 0.12  | 0.30                        | 950                  | 820            | 12.5 × 15                 | 0.13          | 0.33                        | 890                  | 765            |                           |               |  |  |
| 1200      | 122 | 10 × 20     | 0.10  | 0.25                        | 1020                 | 895            | 12.5 × 15                 | 0.12          | 0.30                        | 950                  | 835            |                           |               |  |  |
| 1500      | 152 | 10 × 25     | 0.084 | 0.21                        | 1220                 | 1090           | 12.5 × 15                 | 0.10          | 0.25                        | 1020                 | 915            |                           |               |  |  |
| 1800      | 182 | 10 × 31.5   | 0.078 | 0.20                        | 1370                 | 1230           | 16 × 15                   | 0.084         | 0.21                        | 1270                 | 1140           |                           |               |  |  |
| 2200      | 222 | 10 × 31.5   | 0.066 | 0.17                        | 1470                 | 1320           | 16 × 15                   | 0.078         | 0.20                        | 1340                 | 1200           |                           |               |  |  |
| 2700      | 272 | 12.5 × 25   | 0.051 | 0.14                        | 1590                 | 1430           | 18 × 15                   | 0.072         | 0.18                        | 1500                 | 1350           |                           |               |  |  |
| 3300      | 332 | 12.5 × 25   | 0.045 | 0.11                        | 1710                 | 1530           | 18 × 15                   | 0.065         | 0.16                        | 1600                 | 1440           |                           |               |  |  |
| 3900      | 392 | 12.5 × 31.5 | 0.037 | 0.093                       | 1910                 | 1710           | 16 × 20                   | 0.056         | 0.14                        | 1720                 | 1540           |                           |               |  |  |
| 4700      | 472 | 12.5 × 35.5 | 0.034 | 0.085                       | 2100                 | 1890           | 18 × 20                   | 0.050         | 0.13                        | 1920                 | 1720           |                           |               |  |  |
| 5600      | 562 | 12.5 × 40   | 0.031 | 0.078                       | 2270                 | 2040           | 18 × 20                   | 0.047         | 0.12                        | 1980                 | 1780           |                           |               |  |  |
| 6800      | 682 | 16 × 31.5   | 0.029 | 0.073                       | 2370                 | 2130           | 18 × 25                   | 0.039         | 0.098                       | 2210                 | 1980           |                           |               |  |  |
| 8200      | 822 | 16 × 35.5   | 0.027 | 0.068                       | 2550                 | 2290           | 18 × 31.5                 | 0.031         | 0.078                       | 2390                 | 2150           |                           |               |  |  |
| 10000     | 103 | 16 × 40     | 0.025 | 0.063                       | 2750                 | 2470           | 18 × 31.5                 | 0.028         | 0.070                       | 2490                 | 2240           |                           |               |  |  |
| 12000     | 123 | 18 × 35.5   | 0.023 | 0.058                       | 2820                 | 2530           |                           |               |                             |                      |                |                           |               |  |  |
| 15000     | 153 | 18 × 40     | 0.022 | 0.055                       | 2960                 | 2660           |                           |               |                             |                      |                |                           |               |  |  |

| Cap. (μF) |     | V (Code)    |       | 10 (1A)                     |                      |                |                           |               |                             |                      |                |                           |               |  |  |
|-----------|-----|-------------|-------|-----------------------------|----------------------|----------------|---------------------------|---------------|-----------------------------|----------------------|----------------|---------------------------|---------------|--|--|
|           |     | Item        |       | —                           |                      |                |                           |               |                             | 6                    |                |                           |               |  |  |
|           |     |             |       | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               |  |  |
|           |     |             |       |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |  |  |
| 68        | 680 | 5 × 11      | 1.30  | 3.30                        | 155                  | 97             |                           |               |                             |                      |                |                           |               |  |  |
| 82        | 820 | 5 × 11      | 1.10  | 2.80                        | 175                  | 110            |                           |               |                             |                      |                |                           |               |  |  |
| 100       | 101 | 6.3 × 11    | 0.84  | 2.10                        | 210                  | 135            |                           |               |                             |                      |                |                           |               |  |  |
| 120       | 121 | 6.3 × 11    | 0.72  | 1.80                        | 235                  | 160            |                           |               |                             |                      |                |                           |               |  |  |
| 150       | 151 | 6.3 × 11    | 0.55  | 1.40                        | 265                  | 185            |                           |               |                             |                      |                |                           |               |  |  |
| 180       | 181 | 6.3 × 11    | 0.46  | 1.20                        | 290                  | 205            |                           |               |                             |                      |                |                           |               |  |  |
| 220       | 221 | 6.3 × 15    | 0.38  | 0.95                        | 370                  | 270            |                           |               |                             |                      |                |                           |               |  |  |
| 270       | 271 | 6.3 × 15    | 0.31  | 0.78                        | 405                  | 300            |                           |               |                             |                      |                |                           |               |  |  |
| 330       | 331 | 8 × 11.5    | 0.26  | 0.65                        | 460                  | 350            |                           |               |                             |                      |                |                           |               |  |  |
| 390       | 391 | 8 × 15      | 0.22  | 0.55                        | 550                  | 430            | 10 × 12.5                 | 0.24          | 0.60                        | 555                  | 430            |                           |               |  |  |
| 470       | 471 | 8 × 15      | 0.19  | 0.48                        | 595                  | 475            | 10 × 12.5                 | 0.21          | 0.53                        | 600                  | 475            |                           |               |  |  |
| 560       | 561 | 8 × 20      | 0.16  | 0.40                        | 730                  | 590            | 10 × 15                   | 0.18          | 0.45                        | 700                  | 565            |                           |               |  |  |
| 680       | 681 | 8 × 20      | 0.13  | 0.33                        | 795                  | 660            | 10 × 15                   | 0.14          | 0.35                        | 770                  | 635            |                           |               |  |  |
| 820       | 821 | 10 × 20     | 0.11  | 0.28                        | 985                  | 835            | 12.5 × 15                 | 0.13          | 0.33                        | 920                  | 780            |                           |               |  |  |
| 1000      | 102 | 10 × 20     | 0.096 | 0.24                        | 1060                 | 915            | 12.5 × 15                 | 0.10          | 0.25                        | 1040                 | 895            |                           |               |  |  |
| 1200      | 122 | 10 × 25     | 0.078 | 0.20                        | 1280                 | 1120           | 12.5 × 15                 | 0.096         | 0.24                        | 1060                 | 930            |                           |               |  |  |
| 1500      | 152 | 10 × 31.5   | 0.072 | 0.18                        | 1440                 | 1290           | 16 × 15                   | 0.078         | 0.20                        | 1330                 | 1190           |                           |               |  |  |
| 1800      | 182 | 12.5 × 20   | 0.057 | 0.14                        | 1470                 | 1320           | 16 × 15                   | 0.072         | 0.18                        | 1420                 | 1270           |                           |               |  |  |
| 2200      | 222 | 12.5 × 25   | 0.045 | 0.11                        | 1710                 | 1530           | 18 × 15                   | 0.060         | 0.15                        | 1600                 | 1440           |                           |               |  |  |
| 2700      | 272 | 12.5 × 31.5 | 0.036 | 0.090                       | 1940                 | 1740           | 16 × 20                   | 0.051         | 0.13                        | 1740                 | 1560           |                           |               |  |  |
| 3300      | 332 | 12.5 × 35.5 | 0.032 | 0.080                       | 2180                 | 1960           | 16 × 20                   | 0.045         | 0.11                        | 1850                 | 1660           |                           |               |  |  |
| 3900      | 392 | 12.5 × 40   | 0.030 | 0.075                       | 2360                 | 2120           | 18 × 20                   | 0.041         | 0.10                        | 2050                 | 1840           |                           |               |  |  |
| 4700      | 472 | 16 × 31.5   | 0.028 | 0.070                       | 2420                 | 2170           | 18 × 25                   | 0.035         | 0.088                       | 2250                 | 2020           |                           |               |  |  |
| 5600      | 562 | 16 × 35.5   | 0.026 | 0.065                       | 2610                 | 2340           | 18 × 25                   | 0.033         | 0.083                       | 2340                 | 2100           |                           |               |  |  |
| 6800      | 682 | 16 × 35.5   | 0.024 | 0.060                       | 2680                 | 2410           | 18 × 31.5                 | 0.027         | 0.068                       | 2540                 | 2280           |                           |               |  |  |
| 8200      | 822 | 16 × 40     | 0.023 | 0.058                       | 2820                 | 2530           | 18 × 35.5                 | 0.025         | 0.063                       | 2690                 | 2420           |                           |               |  |  |
| 10000     | 103 | 18 × 40     | 0.021 | 0.053                       | 3040                 | 2730           |                           |               |                             |                      |                |                           |               |  |  |

# ALUMINUM ELECTROLYTIC CAPACITORS



PJ series

## ■ Standard ratings

| Cap. (μF) | V (Code) | Size code | 16 (1C)                     |                      |                |                           |               |                             |                      |                |                           |               |
|-----------|----------|-----------|-----------------------------|----------------------|----------------|---------------------------|---------------|-----------------------------|----------------------|----------------|---------------------------|---------------|
|           |          |           | —                           |                      |                |                           | 6             |                             |                      |                |                           |               |
|           |          |           | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               |
|           |          |           |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |
| 47        | 470      |           | 5 × 11                      | 1.30                 | 3.30           | 155                       | 92            |                             |                      |                |                           |               |
| 56        | 560      |           | 5 × 11                      | 1.10                 | 2.80           | 175                       | 105           |                             |                      |                |                           |               |
| 68        | 680      |           | 6.3 × 11                    | 0.78                 | 2.00           | 220                       | 135           |                             |                      |                |                           |               |
| 82        | 820      |           | 6.3 × 11                    | 0.66                 | 1.70           | 240                       | 155           |                             |                      |                |                           |               |
| 100       | 101      |           | 6.3 × 11                    | 0.55                 | 1.40           | 265                       | 175           |                             |                      |                |                           |               |
| 120       | 121      |           | 6.3 × 11                    | 0.45                 | 1.10           | 290                       | 195           |                             |                      |                |                           |               |
| 150       | 151      |           | 6.3 × 15                    | 0.37                 | 0.93           | 375                       | 260           |                             |                      |                |                           |               |
| 180       | 181      |           | 6.3 × 15                    | 0.31                 | 0.78           | 405                       | 285           |                             |                      |                |                           |               |
| 220       | 221      |           | 8 × 11.5                    | 0.26                 | 0.65           | 460                       | 335           |                             |                      |                |                           |               |
| 270       | 271      |           | 8 × 15                      | 0.22                 | 0.55           | 550                       | 410           | 10 × 12.5                   | 0.22                 | 0.55           | 575                       | 430           |
| 330       | 331      |           | 8 × 15                      | 0.18                 | 0.45           | 595                       | 455           | 10 × 12.5                   | 0.18                 | 0.45           | 625                       | 480           |
| 390       | 391      |           | 8 × 20                      | 0.16                 | 0.40           | 730                       | 570           | 10 × 15                     | 0.16                 | 0.40           | 730                       | 570           |
| 470       | 471      |           | 8 × 20                      | 0.14                 | 0.35           | 770                       | 615           | 10 × 15                     | 0.14                 | 0.35           | 770                       | 615           |
| 560       | 561      |           | 10 × 20                     | 0.12                 | 0.30           | 950                       | 770           | 12.5 × 15                   | 0.13                 | 0.33           | 920                       | 745           |
| 680       | 681      |           | 10 × 20                     | 0.10                 | 0.25           | 1020                      | 845           | 12.5 × 15                   | 0.11                 | 0.28           | 985                       | 815           |
| 820       | 821      |           | 10 × 25                     | 0.084                | 0.21           | 1220                      | 1030          | 12.5 × 15                   | 0.096                | 0.24           | 1060                      | 895           |
| 1000      | 102      |           | 10 × 31.5                   | 0.072                | 0.18           | 1410                      | 1210          | 16 × 15                     | 0.084                | 0.21           | 1270                      | 1090          |
| 1200      | 122      |           | 12.5 × 20                   | 0.060                | 0.15           | 1430                      | 1250          | 16 × 15                     | 0.072                | 0.18           | 1390                      | 1220          |
| 1500      | 152      |           | 12.5 × 25                   | 0.048                | 0.12           | 1660                      | 1490          | 18 × 15                     | 0.066                | 0.17           | 1560                      | 1400          |
| 1800      | 182      |           | 12.5 × 31.5                 | 0.039                | 0.10           | 1880                      | 1690          | 16 × 20                     | 0.054                | 0.14           | 1700                      | 1530          |
| 2200      | 222      |           | 12.5 × 31.5                 | 0.034                | 0.085          | 2010                      | 1800          | 16 × 20                     | 0.048                | 0.12           | 1800                      | 1620          |
| 2700      | 272      |           | 12.5 × 35.5                 | 0.031                | 0.078          | 2220                      | 1990          | 16 × 25                     | 0.040                | 0.10           | 2010                      | 1800          |
| 3300      | 332      |           | 12.5 × 40                   | 0.028                | 0.070          | 2410                      | 2160          | 18 × 20                     | 0.039                | 0.10           | 2090                      | 1880          |
| 3900      | 392      |           | 16 × 31.5                   | 0.027                | 0.068          | 2470                      | 2220          | 18 × 25                     | 0.034                | 0.085          | 2290                      | 2060          |
| 4700      | 472      |           | 16 × 35.5                   | 0.025                | 0.063          | 2680                      | 2410          | 18 × 31.5                   | 0.028                | 0.070          | 2490                      | 2240          |
| 5600      | 562      |           | 16 × 40                     | 0.024                | 0.060          | 2820                      | 2530          | 18 × 35.5                   | 0.027                | 0.068          | 2620                      | 2350          |
| 6800      | 682      |           | 18 × 35.5                   | 0.022                | 0.055          | 2900                      | 2610          |                             |                      |                |                           |               |
| 8200      | 822      |           | 18 × 40                     | 0.021                | 0.053          | 3040                      | 2730          |                             |                      |                |                           |               |

| Cap. (μF) | V (Code) | Size code | 25 (1E)                     |                      |                |                           |               |                             |                      |                |                           |               |
|-----------|----------|-----------|-----------------------------|----------------------|----------------|---------------------------|---------------|-----------------------------|----------------------|----------------|---------------------------|---------------|
|           |          |           | —                           |                      |                |                           | 6             |                             |                      |                |                           |               |
|           |          |           | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               |
|           |          |           |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |
| 33        | 330      |           | 5 × 11                      | 1.30                 | 3.30           | 155                       | 88            |                             |                      |                |                           |               |
| 39        | 390      |           | 5 × 11                      | 1.10                 | 2.80           | 175                       | 100           |                             |                      |                |                           |               |
| 47        | 470      |           | 6.3 × 11                    | 0.84                 | 2.10           | 210                       | 125           |                             |                      |                |                           |               |
| 56        | 560      |           | 6.3 × 11                    | 0.72                 | 1.80           | 235                       | 140           |                             |                      |                |                           |               |
| 68        | 680      |           | 6.3 × 11                    | 0.57                 | 1.40           | 260                       | 160           |                             |                      |                |                           |               |
| 82        | 820      |           | 6.3 × 11                    | 0.47                 | 1.20           | 285                       | 180           |                             |                      |                |                           |               |
| 100       | 101      |           | 6.3 × 15                    | 0.39                 | 0.98           | 370                       | 245           |                             |                      |                |                           |               |
| 120       | 121      |           | 6.3 × 15                    | 0.32                 | 0.80           | 405                       | 275           |                             |                      |                |                           |               |
| 150       | 151      |           | 8 × 11.5                    | 0.26                 | 0.65           | 460                       | 320           |                             |                      |                |                           |               |
| 180       | 181      |           | 8 × 15                      | 0.22                 | 0.55           | 550                       | 390           | 10 × 12.5                   | 0.24                 | 0.60           | 555                       | 395           |
| 220       | 221      |           | 8 × 15                      | 0.18                 | 0.45           | 625                       | 455           | 10 × 12.5                   | 0.21                 | 0.53           | 600                       | 435           |
| 270       | 271      |           | 8 × 20                      | 0.15                 | 0.38           | 750                       | 560           | 10 × 15                     | 0.18                 | 0.45           | 700                       | 525           |
| 330       | 331      |           | 8 × 20                      | 0.13                 | 0.33           | 795                       | 610           | 10 × 15                     | 0.15                 | 0.38           | 750                       | 575           |
| 390       | 391      |           | 10 × 20                     | 0.11                 | 0.28           | 985                       | 770           | 12.5 × 15                   | 0.13                 | 0.33           | 920                       | 720           |
| 470       | 471      |           | 10 × 20                     | 0.10                 | 0.25           | 1020                      | 810           | 12.5 × 15                   | 0.11                 | 0.28           | 985                       | 785           |
| 560       | 561      |           | 10 × 25                     | 0.084                | 0.21           | 1220                      | 990           | 12.5 × 15                   | 0.10                 | 0.25           | 1060                      | 860           |
| 680       | 681      |           | 10 × 31.5                   | 0.072                | 0.18           | 1420                      | 1180          | 16 × 15                     | 0.084                | 0.21           | 1270                      | 1050          |
| 820       | 821      |           | 12.5 × 20                   | 0.059                | 0.15           | 1430                      | 1210          | 16 × 15                     | 0.079                | 0.20           | 1340                      | 1130          |
| 1000      | 102      |           | 12.5 × 25                   | 0.048                | 0.12           | 1660                      | 1430          | 18 × 15                     | 0.066                | 0.17           | 1520                      | 1310          |
| 1200      | 122      |           | 12.5 × 25                   | 0.043                | 0.11           | 1760                      | 1550          | 18 × 15                     | 0.061                | 0.15           | 1600                      | 1400          |
| 1500      | 152      |           | 12.5 × 31.5                 | 0.035                | 0.088          | 1980                      | 1780          | 16 × 20                     | 0.050                | 0.13           | 1770                      | 1590          |
| 1800      | 182      |           | 12.5 × 35.5                 | 0.032                | 0.080          | 2180                      | 1960          | 16 × 25                     | 0.041                | 0.10           | 1980                      | 1780          |
| 2200      | 222      |           | 12.5 × 40                   | 0.029                | 0.073          | 2360                      | 2120          | 18 × 20                     | 0.040                | 0.10           | 2050                      | 1840          |
| 2700      | 272      |           | 16 × 31.5                   | 0.027                | 0.068          | 2470                      | 2220          | 18 × 25                     | 0.034                | 0.085          | 2290                      | 2060          |
| 3300      | 332      |           | 16 × 35.5                   | 0.025                | 0.063          | 2680                      | 2410          | 18 × 31.5                   | 0.029                | 0.073          | 2490                      | 2240          |
| 3900      | 392      |           | 16 × 40                     | 0.023                | 0.058          | 2820                      | 2530          | 18 × 35.5                   | 0.026                | 0.065          | 2690                      | 2420          |
| 4700      | 472      |           | 18 × 40                     | 0.022                | 0.055          | 2960                      | 2660          |                             |                      |                |                           |               |

# ALUMINUM ELECTROLYTIC CAPACITORS



PJ series

## Standard ratings

| Cap. (μF) |     | V (Code)    |       | 35 (1V)                     |                      |                |                           |               |                             |                      |                |                           |               |  |
|-----------|-----|-------------|-------|-----------------------------|----------------------|----------------|---------------------------|---------------|-----------------------------|----------------------|----------------|---------------------------|---------------|--|
|           |     | Size code   | Item  | —                           |                      |                |                           |               |                             | 6                    |                |                           |               |  |
|           |     |             |       | Case size<br>ΦD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               | Case size<br>ΦD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               |  |
|           |     |             |       |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |  |
| 22        | 220 | 5 × 11      | 1.30  | 3.30                        | 160                  | 85             |                           |               |                             |                      |                |                           |               |  |
| 27        | 270 | 5 × 11      | 1.00  | 2.50                        | 180                  | 99             |                           |               |                             |                      |                |                           |               |  |
| 33        | 330 | 6.3 × 11    | 0.78  | 2.00                        | 225                  | 125            |                           |               |                             |                      |                |                           |               |  |
| 39        | 390 | 6.3 × 11    | 0.66  | 1.70                        | 245                  | 140            |                           |               |                             |                      |                |                           |               |  |
| 47        | 470 | 6.3 × 11    | 0.54  | 1.40                        | 270                  | 160            |                           |               |                             |                      |                |                           |               |  |
| 56        | 560 | 6.3 × 11    | 0.45  | 1.10                        | 295                  | 180            |                           |               |                             |                      |                |                           |               |  |
| 68        | 680 | 6.3 × 15    | 0.37  | 0.93                        | 370                  | 230            |                           |               |                             |                      |                |                           |               |  |
| 82        | 820 | 6.3 × 15    | 0.31  | 0.78                        | 415                  | 265            |                           |               |                             |                      |                |                           |               |  |
| 100       | 101 | 8 × 11.5    | 0.26  | 0.65                        | 460                  | 305            |                           |               |                             |                      |                |                           |               |  |
| 120       | 121 | 8 × 15      | 0.22  | 0.55                        | 550                  | 370            | 10 × 12.5                 | 0.24          | 0.60                        | 555                  | 375            |                           |               |  |
| 150       | 151 | 8 × 15      | 0.18  | 0.45                        | 595                  | 415            | 10 × 12.5                 | 0.20          | 0.50                        | 625                  | 435            |                           |               |  |
| 180       | 181 | 8 × 20      | 0.16  | 0.40                        | 730                  | 520            | 10 × 15                   | 0.18          | 0.45                        | 700                  | 500            |                           |               |  |
| 220       | 221 | 8 × 20      | 0.13  | 0.33                        | 795                  | 580            | 10 × 15                   | 0.14          | 0.35                        | 770                  | 560            |                           |               |  |
| 270       | 271 | 10 × 20     | 0.11  | 0.28                        | 985                  | 735            | 12.5 × 15                 | 0.13          | 0.33                        | 920                  | 690            |                           |               |  |
| 330       | 331 | 10 × 20     | 0.096 | 0.24                        | 1060                 | 810            | 12.5 × 15                 | 0.10          | 0.25                        | 1020                 | 780            |                           |               |  |
| 390       | 391 | 10 × 25     | 0.084 | 0.21                        | 1220                 | 955            | 12.5 × 15                 | 0.096         | 0.24                        | 1060                 | 825            |                           |               |  |
| 470       | 471 | 10 × 31.5   | 0.072 | 0.18                        | 1420                 | 1130           | 16 × 15                   | 0.084         | 0.21                        | 1270                 | 1010           |                           |               |  |
| 560       | 561 | 12.5 × 20   | 0.059 | 0.15                        | 1430                 | 1160           | 16 × 15                   | 0.075         | 0.19                        | 1360                 | 1100           |                           |               |  |
| 680       | 681 | 12.5 × 25   | 0.048 | 0.12                        | 1660                 | 1370           | 18 × 15                   | 0.066         | 0.17                        | 1540                 | 1270           |                           |               |  |
| 820       | 821 | 12.5 × 25   | 0.042 | 0.11                        | 1760                 | 1490           | 18 × 15                   | 0.060         | 0.15                        | 1620                 | 1370           |                           |               |  |
| 1000      | 102 | 12.5 × 31.5 | 0.035 | 0.088                       | 1980                 | 1710           | 16 × 20                   | 0.050         | 0.13                        | 1770                 | 1530           |                           |               |  |
| 1200      | 122 | 12.5 × 35.5 | 0.031 | 0.078                       | 2180                 | 1920           | 16 × 25                   | 0.041         | 0.10                        | 1980                 | 1740           |                           |               |  |
| 1500      | 152 | 12.5 × 40   | 0.029 | 0.073                       | 2360                 | 2120           | 18 × 20                   | 0.040         | 0.10                        | 2050                 | 1840           |                           |               |  |
| 1800      | 182 | 16 × 31.5   | 0.027 | 0.068                       | 2470                 | 2220           | 18 × 25                   | 0.034         | 0.085                       | 2290                 | 2060           |                           |               |  |
| 2200      | 222 | 16 × 35.5   | 0.024 | 0.060                       | 2680                 | 2410           | 18 × 31.5                 | 0.028         | 0.070                       | 2490                 | 2240           |                           |               |  |
| 2700      | 272 | 16 × 40     | 0.022 | 0.055                       | 2900                 | 2610           | 18 × 35.5                 | 0.026         | 0.065                       | 2690                 | 2420           |                           |               |  |
| 3300      | 332 | 18 × 40     | 0.021 | 0.053                       | 3040                 | 2730           |                           |               |                             |                      |                |                           |               |  |

| Cap. (μF) |     | V (Code)    |                             | 50 (1H)              |                |                           |               |                             |                      |                |                           |               |
|-----------|-----|-------------|-----------------------------|----------------------|----------------|---------------------------|---------------|-----------------------------|----------------------|----------------|---------------------------|---------------|
|           |     | Size code   |                             | —                    |                |                           |               | 6                           |                      |                |                           |               |
|           |     | Item        | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               |
|           |     |             |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |
| 0.47      | R47 | 5 × 11      | 31.0                        | 80.0                 | 22             | 11                        |               |                             |                      |                |                           |               |
| 0.68      | R68 | 5 × 11      | 21.0                        | 55.0                 | 28             | 14                        |               |                             |                      |                |                           |               |
| 1         | 010 | 5 × 11      | 14.0                        | 38.0                 | 36             | 18                        |               |                             |                      |                |                           |               |
| 1.5       | 1R5 | 5 × 11      | 9.80                        | 28.0                 | 45             | 22                        |               |                             |                      |                |                           |               |
| 2.2       | 2R2 | 5 × 11      | 6.50                        | 18.0                 | 54             | 27                        |               |                             |                      |                |                           |               |
| 3.3       | 3R3 | 5 × 11      | 4.60                        | 12.0                 | 66             | 33                        |               |                             |                      |                |                           |               |
| 4.7       | 4R7 | 5 × 11      | 3.10                        | 7.80                 | 81             | 40                        |               |                             |                      |                |                           |               |
| 6.8       | 6R8 | 5 × 11      | 2.50                        | 6.30                 | 91             | 45                        |               |                             |                      |                |                           |               |
| 10        | 100 | 5 × 11      | 2.00                        | 5.00                 | 115            | 57                        |               |                             |                      |                |                           |               |
| 12        | 120 | 5 × 11      | 1.70                        | 4.30                 | 125            | 62                        |               |                             |                      |                |                           |               |
| 15        | 150 | 5 × 11      | 1.30                        | 3.30                 | 145            | 72                        |               |                             |                      |                |                           |               |
| 18        | 180 | 5 × 11      | 1.10                        | 2.80                 | 155            | 79                        |               |                             |                      |                |                           |               |
| 22        | 220 | 6.3 × 11    | 0.91                        | 2.30                 | 195            | 100                       |               |                             |                      |                |                           |               |
| 27        | 270 | 6.3 × 11    | 0.74                        | 1.90                 | 215            | 115                       |               |                             |                      |                |                           |               |
| 33        | 330 | 6.3 × 11    | 0.60                        | 1.50                 | 240            | 135                       |               |                             |                      |                |                           |               |
| 39        | 390 | 6.3 × 11    | 0.50                        | 1.30                 | 260            | 150                       |               |                             |                      |                |                           |               |
| 47        | 470 | 6.3 × 15    | 0.42                        | 1.10                 | 330            | 195                       |               |                             |                      |                |                           |               |
| 56        | 560 | 6.3 × 15    | 0.35                        | 0.88                 | 360            | 220                       |               |                             |                      |                |                           |               |
| 68        | 680 | 8 × 11.5    | 0.28                        | 0.70                 | 410            | 255                       |               |                             |                      |                |                           |               |
| 82        | 820 | 8 × 15      | 0.22                        | 0.55                 | 500            | 320                       | 10 × 12.5     | 0.23                        | 0.58                 | 510            | 330                       |               |
| 100       | 101 | 8 × 20      | 0.18                        | 0.45                 | 620            | 410                       | 10 × 15       | 0.21                        | 0.53                 | 580            | 385                       |               |
| 120       | 121 | 8 × 20      | 0.16                        | 0.40                 | 670            | 455                       | 10 × 15       | 0.17                        | 0.43                 | 640            | 435                       |               |
| 150       | 151 | 10 × 20     | 0.13                        | 0.33                 | 820            | 570                       | 12.5 × 15     | 0.14                        | 0.35                 | 785            | 545                       |               |
| 180       | 181 | 10 × 20     | 0.11                        | 0.28                 | 890            | 635                       | 12.5 × 15     | 0.12                        | 0.31                 | 845            | 605                       |               |
| 220       | 221 | 10 × 25     | 0.098                       | 0.25                 | 1040           | 760                       | 12.5 × 15     | 0.10                        | 0.25                 | 920            | 670                       |               |
| 270       | 271 | 10 × 31.5   | 0.085                       | 0.21                 | 1200           | 900                       | 16 × 15       | 0.091                       | 0.23                 | 1120           | 840                       |               |
| 330       | 331 | 10 × 31.5   | 0.072                       | 0.18                 | 1300           | 995                       | 16 × 15       | 0.078                       | 0.20                 | 1210           | 925                       |               |
| 390       | 391 | 12.5 × 25   | 0.053                       | 0.13                 | 1440           | 1120                      | 16 × 15       | 0.072                       | 0.18                 | 1270           | 990                       |               |
| 470       | 471 | 12.5 × 25   | 0.048                       | 0.12                 | 1500           | 1190                      | 18 × 15       | 0.060                       | 0.15                 | 1470           | 1170                      |               |
| 560       | 561 | 12.5 × 31.5 | 0.040                       | 0.10                 | 1680           | 1360                      | 16 × 20       | 0.053                       | 0.13                 | 1550           | 1260                      |               |
| 680       | 681 | 12.5 × 35.5 | 0.036                       | 0.090                | 1850           | 1530                      | 16 × 20       | 0.048                       | 0.12                 | 1630           | 1350                      |               |
| 820       | 821 | 12.5 × 40   | 0.033                       | 0.083                | 2010           | 1700                      | 18 × 20       | 0.043                       | 0.11                 | 1810           | 1530                      |               |
| 1000      | 102 | 16 × 31.5   | 0.030                       | 0.075                | 2120           | 1830                      | 18 × 25       | 0.036                       | 0.090                | 2000           | 1730                      |               |
| 1200      | 122 | 16 × 35.5   | 0.028                       | 0.070                | 2260           | 1990                      | 18 × 31.5     | 0.031                       | 0.078                | 2140           | 1880                      |               |
| 1500      | 152 | 16 × 40     | 0.026                       | 0.065                | 2410           | 2170                      | 18 × 31.5     | 0.029                       | 0.073                | 2220           | 1990                      |               |
| 1800      | 182 | 18 × 35.5   | 0.025                       | 0.063                | 2460           | 2210                      |               |                             |                      |                |                           |               |

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

PJ series

## Standard ratings

| Cap. (μF) | V (Code) | Size code   | Item  | 63 (1J)                     |                      |                |                           |               |                             |                      |                |                           |               |
|-----------|----------|-------------|-------|-----------------------------|----------------------|----------------|---------------------------|---------------|-----------------------------|----------------------|----------------|---------------------------|---------------|
|           |          |             |       | —                           |                      |                |                           | 6             |                             |                      |                |                           |               |
|           |          |             |       | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               |
|           |          |             |       |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |
| 10        | 100      | 5 × 11      | 1.60  | 4.00                        | 135                  | 67             |                           |               |                             |                      |                |                           |               |
| 12        | 120      | 5 × 11      | 1.40  | 3.50                        | 145                  | 72             |                           |               |                             |                      |                |                           |               |
| 15        | 150      | 6.3 × 11    | 1.10  | 2.80                        | 185                  | 92             |                           |               |                             |                      |                |                           |               |
| 18        | 180      | 6.3 × 11    | 0.95  | 2.40                        | 195                  | 100            |                           |               |                             |                      |                |                           |               |
| 22        | 220      | 6.3 × 11    | 0.78  | 2.00                        | 215                  | 110            |                           |               |                             |                      |                |                           |               |
| 27        | 270      | 6.3 × 11    | 0.64  | 1.60                        | 240                  | 130            |                           |               |                             |                      |                |                           |               |
| 33        | 330      | 6.3 × 15    | 0.52  | 1.30                        | 305                  | 170            |                           |               |                             |                      |                |                           |               |
| 39        | 390      | 6.3 × 15    | 0.45  | 1.10                        | 330                  | 190            |                           |               |                             |                      |                |                           |               |
| 47        | 470      | 8 × 11.5    | 0.37  | 0.93                        | 365                  | 215            |                           |               |                             |                      |                |                           |               |
| 56        | 560      | 8 × 15      | 0.31  | 0.78                        | 450                  | 275            | 10 × 12.5                 | 0.34          | 0.85                        | 450                  | 275            |                           |               |
| 68        | 680      | 8 × 15      | 0.26  | 0.65                        | 500                  | 315            | 10 × 12.5                 | 0.28          | 0.70                        | 495                  | 310            |                           |               |
| 82        | 820      | 8 × 20      | 0.22  | 0.55                        | 600                  | 385            | 10 × 15                   | 0.24          | 0.60                        | 580                  | 375            |                           |               |
| 100       | 101      | 10 × 20     | 0.18  | 0.45                        | 750                  | 495            | 12.5 × 15                 | 0.20          | 0.50                        | 695                  | 460            |                           |               |
| 120       | 121      | 10 × 20     | 0.15  | 0.38                        | 820                  | 555            | 12.5 × 15                 | 0.18          | 0.45                        | 750                  | 510            |                           |               |
| 150       | 151      | 10 × 25     | 0.13  | 0.33                        | 950                  | 665            | 12.5 × 15                 | 0.14          | 0.35                        | 845                  | 590            |                           |               |
| 180       | 181      | 10 × 31.5   | 0.11  | 0.28                        | 1110                 | 790            | 16 × 15                   | 0.12          | 0.30                        | 1050                 | 750            |                           |               |
| 220       | 221      | 12.5 × 20   | 0.094 | 0.24                        | 1140                 | 835            | 16 × 15                   | 0.10          | 0.25                        | 1120                 | 820            |                           |               |
| 270       | 271      | 12.5 × 25   | 0.081 | 0.20                        | 1340                 | 1000           | 18 × 15                   | 0.088         | 0.22                        | 1290                 | 965            |                           |               |
| 330       | 331      | 12.5 × 25   | 0.072 | 0.18                        | 1420                 | 1090           | 18 × 15                   | 0.078         | 0.20                        | 1410                 | 1080           |                           |               |
| 390       | 391      | 12.5 × 31.5 | 0.059 | 0.15                        | 1620                 | 1260           | 16 × 20                   | 0.070         | 0.18                        | 1500                 | 1170           |                           |               |
| 470       | 471      | 12.5 × 35.5 | 0.052 | 0.13                        | 1780                 | 1420           | 16 × 25                   | 0.063         | 0.16                        | 1700                 | 1350           |                           |               |
| 560       | 561      | 12.5 × 40   | 0.047 | 0.12                        | 1950                 | 1580           | 18 × 20                   | 0.058         | 0.15                        | 1730                 | 1400           |                           |               |
| 680       | 681      | 16 × 31.5   | 0.043 | 0.11                        | 2050                 | 1700           | 18 × 25                   | 0.051         | 0.13                        | 1940                 | 1610           |                           |               |
| 820       | 821      | 16 × 35.5   | 0.040 | 0.10                        | 2220                 | 1880           | 18 × 31.5                 | 0.043         | 0.12                        | 2110                 | 1780           |                           |               |
| 1000      | 102      | 16 × 40     | 0.037 | 0.093                       | 2370                 | 2050           | 18 × 35.5                 | 0.040         | 0.10                        | 2280                 | 1970           |                           |               |
| 1200      | 122      | 18 × 40     | 0.034 | 0.085                       | 2510                 | 2210           |                           |               |                             |                      |                |                           |               |

| Cap. (μF) | V (Code) | Size code   | 80 (1K) |                             |                      |                |                           |               |                             |                      |                |                           |               |
|-----------|----------|-------------|---------|-----------------------------|----------------------|----------------|---------------------------|---------------|-----------------------------|----------------------|----------------|---------------------------|---------------|
|           |          |             | Item    | —                           |                      |                |                           | 6             |                             |                      |                |                           |               |
|           |          |             |         | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               |
|           |          |             |         |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |
| 4.7       | 4R7      | 5 × 11      | 4.20    | 11.00                       | 53                   | 26             |                           |               |                             |                      |                |                           |               |
| 6.8       | 6R8      | 5 × 11      | 2.60    | 7.00                        | 68                   | 34             |                           |               |                             |                      |                |                           |               |
| 10        | 100      | 6.3 × 11    | 1.70    | 4.60                        | 87                   | 43             |                           |               |                             |                      |                |                           |               |
| 12        | 120      | 6.3 × 11    | 1.40    | 3.80                        | 96                   | 48             |                           |               |                             |                      |                |                           |               |
| 15        | 150      | 6.3 × 11    | 1.20    | 3.20                        | 104                  | 52             |                           |               |                             |                      |                |                           |               |
| 18        | 180      | 6.3 × 11    | 1.00    | 2.70                        | 114                  | 58             |                           |               |                             |                      |                |                           |               |
| 22        | 220      | 6.3 × 15    | 0.77    | 2.10                        | 135                  | 71             |                           |               |                             |                      |                |                           |               |
| 27        | 270      | 6.3 × 15    | 0.63    | 1.70                        | 149                  | 80             |                           |               |                             |                      |                |                           |               |
| 33        | 330      | 8 × 11.5    | 0.53    | 1.40                        | 234                  | 132            |                           |               |                             |                      |                |                           |               |
| 39        | 390      | 8 × 15      | 0.46    | 1.20                        | 272                  | 156            | 10 × 12.5                 | 0.49          | 1.30                        | 271                  | 155            |                           |               |
| 47        | 470      | 8 × 15      | 0.39    | 1.10                        | 295                  | 175            | 10 × 12.5                 | 0.42          | 1.10                        | 293                  | 174            |                           |               |
| 56        | 560      | 8 × 20      | 0.34    | 0.92                        | 347                  | 208            | 10 × 15                   | 0.36          | 0.97                        | 337                  | 202            |                           |               |
| 68        | 680      | 10 × 20     | 0.28    | 0.76                        | 426                  | 264            | 12.5 × 15                 | 0.31          | 0.84                        | 402                  | 249            |                           |               |
| 82        | 820      | 10 × 20     | 0.25    | 0.68                        | 447                  | 284            | 12.5 × 15                 | 0.27          | 0.73                        | 430                  | 273            |                           |               |
| 100       | 101      | 10 × 25     | 0.21    | 0.57                        | 526                  | 347            | 12.5 × 15                 | 0.23          | 0.62                        | 466                  | 308            |                           |               |
| 120       | 121      | 10 × 31.5   | 0.18    | 0.49                        | 606                  | 406            | 16 × 15                   | 0.20          | 0.54                        | 663                  | 444            |                           |               |
| 150       | 151      | 10 × 31.5   | 0.15    | 0.41                        | 663                  | 459            | 16 × 15                   | 0.18          | 0.47                        | 699                  | 484            |                           |               |
| 180       | 181      | 12.5 × 25   | 0.13    | 0.35                        | 734                  | 520            | 16 × 15                   | 0.15          | 0.41                        | 766                  | 543            |                           |               |
| 220       | 221      | 12.5 × 31.5 | 0.12    | 0.32                        | 816                  | 595            | 18 × 15                   | 0.13          | 0.35                        | 881                  | 643            |                           |               |
| 270       | 271      | 12.5 × 31.5 | 0.10    | 0.27                        | 894                  | 667            | 16 × 20                   | 0.11          | 0.30                        | 995                  | 742            |                           |               |
| 330       | 331      | 12.5 × 35.5 | 0.088   | 0.24                        | 1000                 | 767            | 16 × 25                   | 0.099         | 0.27                        | 1140                 | 874            |                           |               |
| 390       | 391      | 12.5 × 40   | 0.078   | 0.21                        | 1060                 | 822            | 18 × 20                   | 0.089         | 0.24                        | 1170                 | 908            |                           |               |
| 470       | 471      | 16 × 31.5   | 0.069   | 0.19                        | 1450                 | 1150           | 18 × 25                   | 0.080         | 0.22                        | 1330                 | 1060           |                           |               |
| 560       | 561      | 16 × 35.5   | 0.062   | 0.17                        | 1600                 | 1300           | 18 × 31.5                 | 0.072         | 0.19                        | 1490                 | 1210           |                           |               |
| 680       | 681      | 16 × 40     | 0.055   | 0.15                        | 1770                 | 1470           | 18 × 31.5                 | 0.065         | 0.18                        | 1560                 | 1300           |                           |               |
| 820       | 821      | 18 × 35.5   | 0.049   | 0.13                        | 1890                 | 1590           |                           |               |                             |                      |                |                           |               |
| 1000      | 102      | 18 × 40     | 0.044   | 0.12                        | 2080                 | 1790           |                           |               |                             |                      |                |                           |               |

※ In case of low profile type, [6] will be put at 12th digit of type numbering system.

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

PJ series

## Standard ratings

| Cap. (μF) | V (Code) | Size code   | Item  | 100 (2A)                    |                      |                |                           |               |                             |                      |                |                           |               |
|-----------|----------|-------------|-------|-----------------------------|----------------------|----------------|---------------------------|---------------|-----------------------------|----------------------|----------------|---------------------------|---------------|
|           |          |             |       | —                           |                      |                |                           | 6             |                             |                      |                |                           |               |
|           |          |             |       | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               | Case size<br>φD × L<br>(mm) | Impedance ( Ω ) MAX. |                | Rated ripple (mArms)      |               |
|           |          |             |       |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz ~<br>200kHz | 105°C / 120Hz |
| 0.47      | R47      | 5 × 11      | 43.0  | 116.0                       | 17                   | 8              |                           |               |                             |                      |                |                           |               |
| 0.68      | R68      | 5 × 11      | 23.0  | 62.0                        | 23                   | 11             |                           |               |                             |                      |                |                           |               |
| 1         | 010      | 5 × 11      | 17.0  | 46.0                        | 27                   | 13             |                           |               |                             |                      |                |                           |               |
| 1.5       | 1R5      | 5 × 11      | 10.0  | 27.0                        | 35                   | 17             |                           |               |                             |                      |                |                           |               |
| 2.2       | 2R2      | 5 × 11      | 6.60  | 18.0                        | 43                   | 21             |                           |               |                             |                      |                |                           |               |
| 3.3       | 3R3      | 5 × 11      | 4.10  | 11.0                        | 54                   | 27             |                           |               |                             |                      |                |                           |               |
| 4.7       | 4R7      | 6.3 × 11    | 2.80  | 7.60                        | 68                   | 34             |                           |               |                             |                      |                |                           |               |
| 6.8       | 6R8      | 6.3 × 11    | 1.90  | 5.10                        | 83                   | 41             |                           |               |                             |                      |                |                           |               |
| 10        | 100      | 6.3 × 11    | 1.20  | 3.20                        | 104                  | 52             |                           |               |                             |                      |                |                           |               |
| 12        | 120      | 6.3 × 11    | 1.00  | 2.70                        | 114                  | 57             |                           |               |                             |                      |                |                           |               |
| 15        | 150      | 6.3 × 15    | 0.81  | 2.20                        | 131                  | 65             |                           |               |                             |                      |                |                           |               |
| 18        | 180      | 6.3 × 15    | 0.67  | 1.80                        | 155                  | 73             |                           |               |                             |                      |                |                           |               |
| 22        | 220      | 8 × 11.5    | 0.55  | 1.50                        | 230                  | 122            |                           |               |                             |                      |                |                           |               |
| 27        | 270      | 8 × 15      | 0.47  | 1.30                        | 269                  | 146            | 10 × 12.5                 | 0.50          | 1.40                        | 268                  | 145            |                           |               |
| 33        | 330      | 8 × 15      | 0.38  | 1.00                        | 299                  | 169            | 10 × 12.5                 | 0.42          | 1.10                        | 293                  | 166            |                           |               |
| 39        | 390      | 8 × 20      | 0.33  | 0.89                        | 352                  | 202            | 10 × 15                   | 0.36          | 0.97                        | 337                  | 193            |                           |               |
| 47        | 470      | 10 × 20     | 0.28  | 0.76                        | 423                  | 252            | 12.5 × 15                 | 0.31          | 0.84                        | 402                  | 239            |                           |               |
| 56        | 560      | 10 × 20     | 0.24  | 0.65                        | 456                  | 274            | 12.5 × 15                 | 0.27          | 0.73                        | 430                  | 258            |                           |               |
| 68        | 680      | 10 × 25     | 0.21  | 0.57                        | 526                  | 326            | 12.5 × 15                 | 0.23          | 0.62                        | 466                  | 289            |                           |               |
| 82        | 820      | 10 × 31.5   | 0.18  | 0.49                        | 606                  | 386            | 16 × 15                   | 0.19          | 0.51                        | 681                  | 433            |                           |               |
| 100       | 101      | 10 × 31.5   | 0.15  | 0.41                        | 663                  | 438            | 16 × 15                   | 0.17          | 0.46                        | 719                  | 475            |                           |               |
| 120       | 121      | 12.5 × 25   | 0.13  | 0.35                        | 774                  | 519            | 16 × 15                   | 0.14          | 0.38                        | 793                  | 531            |                           |               |
| 150       | 151      | 12.5 × 25   | 0.11  | 0.30                        | 798                  | 553            | 18 × 15                   | 0.12          | 0.32                        | 917                  | 635            |                           |               |
| 180       | 181      | 12.5 × 31.5 | 0.098 | 0.26                        | 904                  | 641            | 16 × 20                   | 0.11          | 0.30                        | 995                  | 706            |                           |               |
| 220       | 221      | 12.5 × 35.5 | 0.087 | 0.23                        | 1000                 | 730            | 16 × 25                   | 0.093         | 0.25                        | 1170                 | 854            |                           |               |
| 270       | 271      | 12.5 × 40   | 0.072 | 0.19                        | 1130                 | 843            | 18 × 20                   | 0.080         | 0.22                        | 1230                 | 918            |                           |               |
| 330       | 331      | 16 × 31.5   | 0.062 | 0.17                        | 1520                 | 1160           | 18 × 25                   | 0.070         | 0.19                        | 1420                 | 1080           |                           |               |
| 390       | 391      | 16 × 35.5   | 0.053 | 0.14                        | 1730                 | 1340           | 18 × 31.5                 | 0.062         | 0.17                        | 1600                 | 1240           |                           |               |
| 470       | 471      | 16 × 40     | 0.047 | 0.13                        | 1920                 | 1530           | 18 × 35.5                 | 0.056         | 0.15                        | 1770                 | 1410           |                           |               |
| 560       | 561      | 18 × 35.5   | 0.041 | 0.11                        | 2070                 | 1680           |                           |               |                             |                      |                |                           |               |
| 680       | 681      | 18 × 40     | 0.036 | 0.097                       | 2300                 | 1910           |                           |               |                             |                      |                |                           |               |

※ In case of low profile type, [6] will be put at 12th digit of type numbering system.

| Cap. (μF) | V   | Code | 160       |     | 200       |     | 250       |     | 315       |     | 350       |     | 400       |     | 450       |     |
|-----------|-----|------|-----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|
|           |     |      | 2C        |     | 2D        |     | 2E        |     | 2F        |     | 2V        |     | 2G        |     | 2W        |     |
| 1         | 010 |      | 8 × 11.5  | 19  | 8 × 11.5  | 19  | 8 × 11.5  | 19  | 8 × 11.5  | 19  | 10 × 12.5 | 21  | 10 × 12.5 | 17  | 10 × 15   | 17  |
| 2.2       | 2R2 |      | 8 × 11.5  | 30  | 8 × 11.5  | 30  | 10 × 12.5 | 32  | 10 × 12.5 | 32  | 10 × 15   | 34  | 10 × 15   | 28  | 10 × 20   | 28  |
| 3.3       | 3R3 |      | 10 × 12.5 | 50  | 10 × 12.5 | 50  | 10 × 15   | 52  | 10 × 15   | 52  | 10 × 20   | 54  | 10 × 20   | 47  | 12.5 × 20 | 48  |
| 4.7       | 4R7 |      | 10 × 12.5 | 57  | 10 × 15   | 60  | 10 × 15   | 60  | 10 × 20   | 65  | 10 × 20   | 65  | 12.5 × 20 | 55  | 12.5 × 25 | 55  |
| 10        | 100 |      | 10 × 15   | 90  | 10 × 20   | 95  | 12.5 × 20 | 98  | 12.5 × 20 | 98  | 12.5 × 25 | 100 | 12.5 × 25 | 85  | 16 × 25   | 90  |
| 22        | 220 |      | 12.5 × 20 | 140 | 12.5 × 25 | 145 | 16 × 25   | 150 | 16 × 25   | 150 | 16 × 25   | 150 | 16 × 31.5 | 130 | 16 × 35.5 | 135 |
| 33        | 330 |      | 12.5 × 25 | 175 | 16 × 25   | 180 | 16 × 25   | 180 | 16 × 31.5 | 185 | 16 × 35.5 | 190 | 18 × 35.5 | 170 | 18 × 40   | 170 |
| 47        | 470 |      | 16 × 25   | 220 | 16 × 25   | 220 | 16 × 31.5 | 225 | 18 × 35.5 | 235 | 18 × 40   | 240 |           |     |           |     |
| 100       | 101 |      | 16 × 35.5 | 330 | 18 × 40   | 345 | 18 × 40   | 345 |           |     |           |     |           |     | Case size | ※ 1 |

※ 1 Rated Ripple (mArms) at 105°C 120Hz