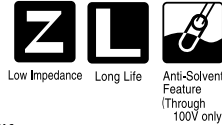
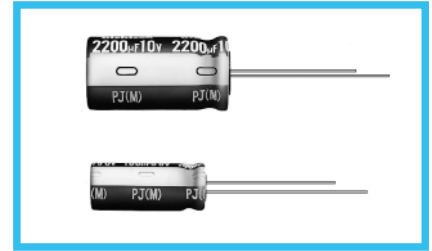
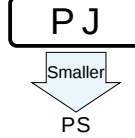


**PJ** series

Low Impedance, For Switching Power Supplies



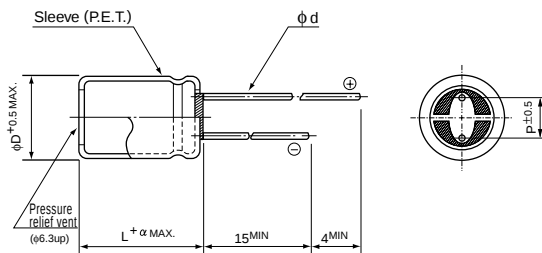
- Low impedance and high reliability withstanding 5000 hours load life at +105°C (3000 / 2000 hours for smaller case sizes as specified below).
- Capacitance ranges available based on the numerical values in E12 series under JIS.
- Ideally suited for use of switching power supplies.
- Compliant to the RoHS directive (2011/65/EU).



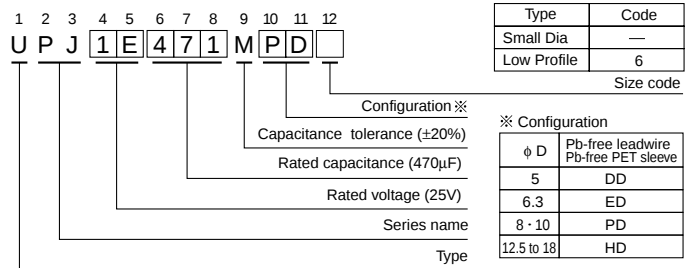
## Specifications

|                                                                             |                                                                                                                                                                                                                                                                                |                                                                                                                         |          |      |         |                    |                                                                                                      |           |            |           |       |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------|------|---------|--------------------|------------------------------------------------------------------------------------------------------|-----------|------------|-----------|-------|
| Item                                                                        | Performance Characteristics                                                                                                                                                                                                                                                    |                                                                                                                         |          |      |         |                    |                                                                                                      |           |            |           |       |
| Category Temperature Range                                                  | -55 to +105°C (6.3 to 100V), -40 to +105°C (160 to 400V), -25 to +105°C (450V)                                                                                                                                                                                                 |                                                                                                                         |          |      |         |                    |                                                                                                      |           |            |           |       |
| Rated Voltage Range                                                         | 6.3 to 450V                                                                                                                                                                                                                                                                    |                                                                                                                         |          |      |         |                    |                                                                                                      |           |            |           |       |
| Rated Capacitance Range                                                     | 0.47 to 15000μF                                                                                                                                                                                                                                                                |                                                                                                                         |          |      |         |                    |                                                                                                      |           |            |           |       |
| Capacitance Tolerance                                                       | ±20% at 120Hz, 20°C                                                                                                                                                                                                                                                            |                                                                                                                         |          |      |         |                    |                                                                                                      |           |            |           |       |
| Leakage Current                                                             | Rated Voltage (V)                                                                                                                                                                                                                                                              | 6.3 to 100                                                                                                              |          |      |         |                    | 160 to 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) |           |            |           |       |
| Tangent of loss angle (tan δ)                                               | 120Hz, 20°C                                                                                                                                                                                                                                                                    |                                                                                                                         |          |      |         |                    |                                                                                                      |           |            |           |       |
|                                                                             | Rated Voltage (V)                                                                                                                                                                                                                                                              | 6.3                                                                                                                     | 10       | 16   | 25      | 35                 | 50                                                                                                   | 63 to 100 | 160 to 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 to 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                                                                   | The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied 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 voltage. |                                                                                                                         |          |      |         | Capacitance change | Within ±20% of the initial capacitance value                                                         |           |            |           |       |
|                                                                             |                                                                                                                                                                                                                                                                                |                                                                                                                         |          |      |         | tan δ              | 200% or less than the initial specified value                                                        |           |            |           |       |
|                                                                             |                                                                                                                                                                                                                                                                                |                                                                                                                         |          |      |         | Leakage current    | Less than or equal to the initial specified value                                                    |           |            |           |       |
| Shelf Life                                                                  | After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.                                        |                                                                                                                         |          |      |         | Capacitance change | Within ±20% of the initial capacitance value                                                         |           |            |           |       |
|                                                                             |                                                                                                                                                                                                                                                                                |                                                                                                                         |          |      |         | tan δ              | 150% or less than the initial specified value                                                        |           |            |           |       |
|                                                                             |                                                                                                                                                                                                                                                                                |                                                                                                                         |          |      |         | Leakage current    | Less than or equal to the initial specified value                                                    |           |            |           |       |
| Marking                                                                     | Printed with white color letter on dark brown sleeve.                                                                                                                                                                                                                          |                                                                                                                         |          |      |         |                    |                                                                                                      |           |            |           |       |

## Radial Lead Type



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



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

|    | 5   | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|----|-----|-----|-----|-----|------|-----|-----|
| 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 |

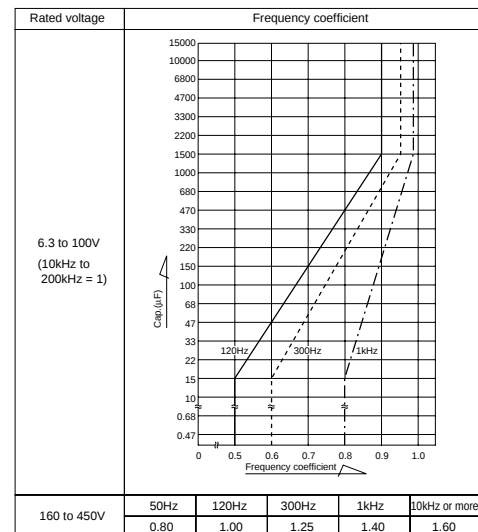
※ In case L > 25 for the φ12.5 dia. unit, lead dia. φ d=0.8mm.

- Frequency coefficient of rated ripple current

• Please refer to page 20 about the end seal configuration.

Please refer to page 20, 21, 22 about the formed or taped product spec.  
Please refer to page 4 for the minimum order quantity.

- Dimension table in next pages.



## ■ Dimensions

| Cap. (μF) | V (Code)<br>Size code<br>Code | 6.3 (0J)    |           | 10 (1A)     |           | 16 (1C)     |           | 25 (1E)     |           | 35 (1V)     |              |
|-----------|-------------------------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|--------------|
|           |                               | —           | 6         | —           | 6         | —           | 6         | —           | 6         | —           | 6            |
| 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) |

| Cap. (μF) | V (Code)<br>Size code<br>Code | 50 (1H)     |           | 63 (1J)     |           | 80 (1K)     |           | 100 (2A)    |              |
|-----------|-------------------------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|--------------|
|           |                               | —           | 6         | —           | 6         | —           | 6         | —           | 6            |
| 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   |           |             |           |             |           |             |              |
| 2200      | 222                           | 18 × 40     |           |             |           |             |           |             | φ D × L (mm) |

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

Dimension table for 160 to 450V products are shown in 237 page.

## ■ Standard Ratings

| Cap. (μF) | Code | Item        | 6.3 (0J)                    |                    |                |                            |               |                             |                    |                |                            |               |
|-----------|------|-------------|-----------------------------|--------------------|----------------|----------------------------|---------------|-----------------------------|--------------------|----------------|----------------------------|---------------|
|           |      |             | —                           |                    |                |                            | 6             |                             |                    |                |                            |               |
|           |      |             | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mA rms)      |               | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mA rms)      |               |
|           |      |             |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / 10kHz to<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / 10kHz to<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) | Code | Item        | 10 (1A)                     |                    |                |                            |               |                             |                    |                |                            |               |
|-----------|------|-------------|-----------------------------|--------------------|----------------|----------------------------|---------------|-----------------------------|--------------------|----------------|----------------------------|---------------|
|           |      |             | —                           |                    |                |                            | 6             |                             |                    |                |                            |               |
|           |      |             | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mA rms)      |               | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mA rms)      |               |
|           |      |             |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / 10kHz to<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / 10kHz to<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          |                             |                    |                |                            |               |

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

## ■ Standard Ratings

| Cap. (μF) |     | V (Code)      |                | 16 (1C) |      |                             |           |                            |               |                       |                |                             |  |                            |               |
|-----------|-----|---------------|----------------|---------|------|-----------------------------|-----------|----------------------------|---------------|-----------------------|----------------|-----------------------------|--|----------------------------|---------------|
|           |     | 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.       |               |
|           |     | 20°C / 100kHz | −10°C / 100kHz |         |      |                             |           | 105°C / 10kHz to<br>200kHz | 105°C / 120Hz | 20°C / 100kHz         | −10°C / 100kHz |                             |  | 105°C / 10kHz to<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)    |                             | 25 (1E)              |                |                            |               |                             |                      |                |                            |               |      |  |  |
|-----------|-----|-------------|-----------------------------|----------------------|----------------|----------------------------|---------------|-----------------------------|----------------------|----------------|----------------------------|---------------|------|--|--|
|           |     | 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 to<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz to<br>200kHz | 105°C / 120Hz |      |  |  |
| Code      |     |             |                             |                      |                |                            |               |                             |                      |                |                            |               |      |  |  |
| 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                       |               |                             |                      |                |                            |               |      |  |  |

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

## ■ Standard Ratings

| Cap. (μF) | V (Code) | Size code   | Item  | 35 (1V)                     |                      |                |                         |               |                             |                      |                |                         |               |
|-----------|----------|-------------|-------|-----------------------------|----------------------|----------------|-------------------------|---------------|-----------------------------|----------------------|----------------|-------------------------|---------------|
|           |          |             |       | —                           |                      |                |                         | 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 to 200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz to 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) | Size code   | Item  | 50 (1H)                     |                      |                |                            |               |                             |                      |                |                            |               |
|-----------|----------|-------------|-------|-----------------------------|----------------------|----------------|----------------------------|---------------|-----------------------------|----------------------|----------------|----------------------------|---------------|
|           |          |             |       | —                           |                      |                |                            |               |                             | 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 to<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz        | −10°C / 100kHz | 105°C / 10kHz to<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           |                            |               |                             |                      |                |                            |               |
| 2200      | 222      | 18 × 40     | 0.024 | 0.060                       | 2560                 | 2300           |                            |               |                             |                      |                |                            |               |

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

## ■ 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 to<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / 10kHz to<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 | Item        | 80 (1K)                     |                    |                |                            |               |                             |                    |                |                            |               |
|-----------|----------|-----------|-------------|-----------------------------|--------------------|----------------|----------------------------|---------------|-----------------------------|--------------------|----------------|----------------------------|---------------|
|           |          |           |             | —                           |                    |                |                            | 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 to<br>200kHz | 105°C / 120Hz |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / 10kHz to<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.

## ■ Standard Ratings

| Cap. (μF) | V (Code) | Size code | Item        | 100 (2A)                    |                    |                |                         |               |                             |                    |                |                         |               |
|-----------|----------|-----------|-------------|-----------------------------|--------------------|----------------|-------------------------|---------------|-----------------------------|--------------------|----------------|-------------------------|---------------|
|           |          |           |             | —                           |                    |                |                         | 6             |                             |                    |                |                         |               |
|           |          |           |             | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mAmps)    |               | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mAmps)    |               |
|           |          |           |             |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / 10kHz to 200kHz | 105°C / 120Hz |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / 10kHz to 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                     | 80            |                             |                    |                |                         |               |
| 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 current (mAmps) at 105°C 120Hz