

PM

Extremely Low Impedance, High Reliability

series

- High reliability withstanding 5000 hour 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.
- Compliant to the RoHS directive (2011/65/EU).



Low Impedance



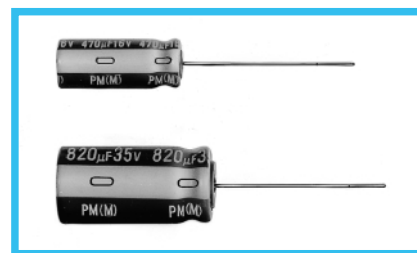
Long Life

Anti-Solvent  
Feature  
(Through 100V only)

PM



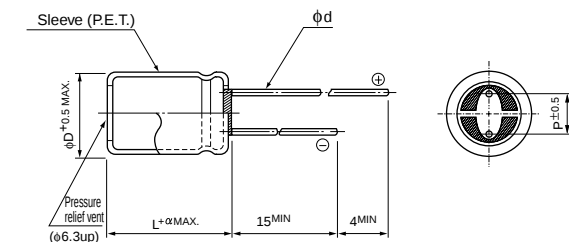
PW



## ■ 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) | For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 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      |     |       |
| Stability at Low Temperature  | Rated voltage (V)                                                                                                                                                                                                                                                              |                                                                                                                         | 6.3 · 10        | 16   | 25 · 35 | 50 to 100 | 160 · 200                                                                                            | 250                                               | 315 · 350  | 400       | 450 | 120Hz |
|                               | 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                                                                                                    | —                                                 | —          | —         | —   |       |
| 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 characteristic requirements listed at right.                                                            |                                                                                                                         |                 |      |         |           | 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



|   |           |     |
|---|-----------|-----|
| α | (φD < 10) | 1.5 |
|   | (φD ≥ 10) | 2.0 |

|    | 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 | 7.5 |
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6* | 0.8  | 0.8 | 0.8 |

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

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

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

1 2 3 4 5 6 7 8 9 10 11 12  
U P M 1 E 4 7 1 M P D

Configuration ※  
Capacitance tolerance (±20%)  
Rated capacitance (470µF)  
Rated voltage (25V)  
Series name  
Type

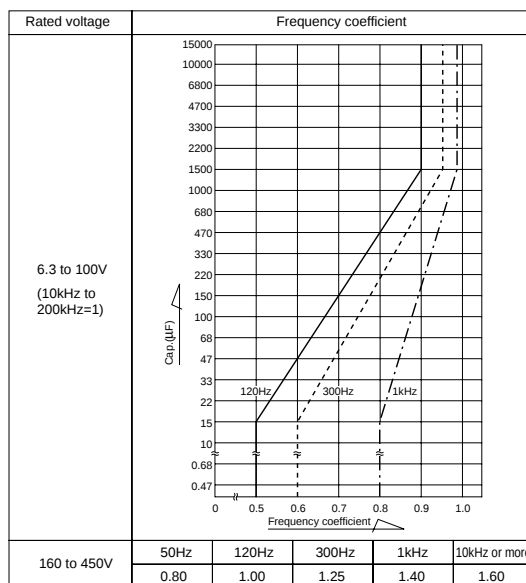
Size code

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

## ※ Configuration

| φ D        | Pb-free leadwire<br>Pb-free PET sleeve |
|------------|----------------------------------------|
| 5          | DD                                     |
| 6.3        | ED                                     |
| 8 · 10     | PD                                     |
| 12.5 to 18 | HD                                     |

## ● Frequency coefficient of rated ripple current



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 page.

## ■ Dimensions

φD×L (mm)

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

| Cap.(μF) | Code | V(Code)<br>Size code |         | 50 (1H) |           | 63 (1J) |   | 80 (1K)   |         | 100 (2A)  |         |
|----------|------|----------------------|---------|---------|-----------|---------|---|-----------|---------|-----------|---------|
|          |      | —                    | 6       | —       | 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      |         |
| 6.8      | 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                |         |         |           |         |   |           |         |           |         |

※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 208 page.

## ■ Standard Ratings

| V(Code)<br>Size code |     | 6.3 (0J)     |                             |                    |                |                         |               |                    |                |                         |               |
|----------------------|-----|--------------|-----------------------------|--------------------|----------------|-------------------------|---------------|--------------------|----------------|-------------------------|---------------|
|                      |     | Item<br>Code | Case size<br>ΦD × L<br>(mm) | —                  |                |                         |               | 6                  |                |                         |               |
|                      |     |              |                             | Impedance (Ω) MAX. |                | Rated ripple (mArms)    |               | 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 |
| Cap. (μF)            |     |              |                             |                    |                |                         |               |                    |                |                         |               |
| 100                  | 101 | 5 × 11       | 0.85                        | 1.70               | 150            | 99                      |               |                    |                |                         |               |
| 120                  | 121 | 5 × 11       | 0.65                        | 1.30               | 175            | 115                     |               |                    |                |                         |               |
| 150                  | 151 | 6.3 × 11     | 0.49                        | 0.98               | 225            | 155                     |               |                    |                |                         |               |
| 180                  | 181 | 6.3 × 11     | 0.39                        | 0.78               | 250            | 175                     |               |                    |                |                         |               |
| 220                  | 221 | 6.3 × 11     | 0.30                        | 0.60               | 285            | 205                     |               |                    |                |                         |               |
| 270                  | 271 | 6.3 × 15     | 0.24                        | 0.48               | 370            | 275                     |               |                    |                |                         |               |
| 330                  | 331 | 6.3 × 15     | 0.20                        | 0.40               | 405            | 310                     |               |                    |                |                         |               |
| 390                  | 391 | 8 × 11.5     | 0.17                        | 0.34               | 445            | 345                     |               |                    |                |                         |               |
| 470                  | 471 | 8 × 15       | 0.14                        | 0.28               | 550            | 435                     | 10 × 12.5     | 0.14               | 0.28           | 635                     | 455           |
| 560                  | 561 | 8 × 15       | 0.12                        | 0.24               | 595            | 480                     | 10 × 12.5     | 0.13               | 0.26           | 670                     | 485           |
| 680                  | 681 | 8 × 20       | 0.10                        | 0.20               | 730            | 605                     | 10 × 15       | 0.11               | 0.22           | 825                     | 580           |
| 820                  | 821 | 8 × 20       | 0.085                       | 0.17               | 795            | 670                     | 10 × 15       | 0.095              | 0.19           | 840                     | 635           |
| 1000                 | 102 | 10 × 20      | 0.075                       | 0.15               | 950            | 820                     | 12.5 × 15     | 0.085              | 0.17           | 890                     | 765           |
| 1200                 | 122 | 10 × 20      | 0.065                       | 0.13               | 1060           | 895                     | 12.5 × 15     | 0.075              | 0.15           | 950                     | 835           |
| 1500                 | 152 | 10 × 25      | 0.055                       | 0.11               | 1260           | 1090                    | 12.5 × 15     | 0.065              | 0.13           | 1020                    | 915           |
| 1800                 | 182 | 10 × 31.5    | 0.050                       | 0.10               | 1370           | 1230                    | 16 × 15       | 0.055              | 0.11           | 1270                    | 1140          |
| 2200                 | 222 | 10 × 31.5    | 0.043                       | 0.086              | 1470           | 1320                    | 16 × 15       | 0.049              | 0.098          | 1340                    | 1200          |
| 2700                 | 272 | 12.5 × 25    | 0.038                       | 0.076              | 1700           | 1430                    | 18 × 15       | 0.044              | 0.088          | 1500                    | 1350          |
| 3300                 | 332 | 12.5 × 25    | 0.034                       | 0.068              | 1710           | 1530                    | 18 × 15       | 0.039              | 0.078          | 1600                    | 1440          |
| 3900                 | 392 | 12.5 × 31.5  | 0.031                       | 0.062              | 1980           | 1710                    | 16 × 20       | 0.036              | 0.072          | 1770                    | 1540          |
| 4700                 | 472 | 12.5 × 35.5  | 0.028                       | 0.056              | 2230           | 1890                    | 18 × 20       | 0.032              | 0.064          | 1920                    | 1720          |
| 5600                 | 562 | 12.5 × 40    | 0.026                       | 0.052              | 2460           | 2040                    | 18 × 20       | 0.030              | 0.060          | 1980                    | 1780          |
| 6800                 | 682 | 16 × 31.5    | 0.024                       | 0.048              | 2510           | 2130                    | 18 × 25       | 0.027              | 0.054          | 2350                    | 1980          |
| 8200                 | 822 | 16 × 35.5    | 0.022                       | 0.044              | 2770           | 2290                    | 18 × 31.5     | 0.025              | 0.050          | 2600                    | 2150          |
| 10000                | 103 | 16 × 40      | 0.020                       | 0.040              | 3110           | 2470                    | 18 × 31.5     | 0.023              | 0.046          | 2720                    | 2240          |
| 12000                | 123 | 18 × 35.5    | 0.019                       | 0.038              | 3050           | 2530                    |               |                    |                |                         |               |
| 15000                | 153 | 18 × 40      | 0.018                       | 0.036              | 3300           | 2660                    |               |                    |                |                         |               |

| V(Code)<br>Size code |     | 10 (1A)      |                             |                    |                |                         |               |                    |                |                         |               |
|----------------------|-----|--------------|-----------------------------|--------------------|----------------|-------------------------|---------------|--------------------|----------------|-------------------------|---------------|
|                      |     | Item<br>Code | Case size<br>ΦD × L<br>(mm) | —                  |                |                         |               | 6                  |                |                         |               |
|                      |     |              |                             | Impedance (Ω) MAX. |                | Rated ripple (mArms)    |               | 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 |
| Cap. (μF)            |     |              |                             |                    |                |                         |               |                    |                |                         |               |
| 68                   | 680 | 5 × 11       | 0.80                        | 1.60               | 155            | 97                      |               |                    |                |                         |               |
| 82                   | 820 | 5 × 11       | 0.65                        | 1.30               | 175            | 110                     |               |                    |                |                         |               |
| 100                  | 101 | 6.3 × 11     | 0.55                        | 1.10               | 210            | 135                     |               |                    |                |                         |               |
| 120                  | 121 | 6.3 × 11     | 0.44                        | 0.88               | 235            | 160                     |               |                    |                |                         |               |
| 150                  | 151 | 6.3 × 11     | 0.35                        | 0.70               | 265            | 185                     |               |                    |                |                         |               |
| 180                  | 181 | 6.3 × 11     | 0.29                        | 0.58               | 290            | 205                     |               |                    |                |                         |               |
| 220                  | 221 | 6.3 × 15     | 0.24                        | 0.48               | 370            | 270                     |               |                    |                |                         |               |
| 270                  | 271 | 6.3 × 15     | 0.20                        | 0.40               | 405            | 300                     |               |                    |                |                         |               |
| 330                  | 331 | 8 × 11.5     | 0.16                        | 0.32               | 460            | 350                     |               |                    |                |                         |               |
| 390                  | 391 | 8 × 15       | 0.14                        | 0.28               | 550            | 430                     | 10 × 12.5     | 0.15               | 0.30           | 635                     | 430           |
| 470                  | 471 | 8 × 15       | 0.12                        | 0.24               | 595            | 475                     | 10 × 12.5     | 0.13               | 0.26           | 670                     | 475           |
| 560                  | 561 | 8 × 20       | 0.10                        | 0.20               | 730            | 590                     | 10 × 15       | 0.11               | 0.22           | 700                     | 565           |
| 680                  | 681 | 8 × 20       | 0.085                       | 0.17               | 795            | 660                     | 10 × 15       | 0.090              | 0.18           | 825                     | 635           |
| 820                  | 821 | 10 × 20      | 0.070                       | 0.14               | 985            | 835                     | 12.5 × 15     | 0.080              | 0.16           | 920                     | 780           |
| 1000                 | 102 | 10 × 20      | 0.060                       | 0.12               | 1060           | 915                     | 12.5 × 15     | 0.065              | 0.13           | 1040                    | 895           |
| 1200                 | 122 | 10 × 25      | 0.050                       | 0.10               | 1260           | 1120                    | 12.5 × 15     | 0.060              | 0.12           | 1060                    | 930           |
| 1500                 | 152 | 10 × 31.5    | 0.045                       | 0.090              | 1450           | 1290                    | 16 × 15       | 0.050              | 0.10           | 1330                    | 1190          |
| 1800                 | 182 | 12.5 × 20    | 0.039                       | 0.078              | 1470           | 1320                    | 16 × 15       | 0.044              | 0.088          | 1420                    | 1270          |
| 2200                 | 222 | 12.5 × 25    | 0.034                       | 0.068              | 1710           | 1530                    | 18 × 15       | 0.039              | 0.078          | 1600                    | 1440          |
| 2700                 | 272 | 12.5 × 31.5  | 0.030                       | 0.060              | 1980           | 1740                    | 16 × 20       | 0.035              | 0.070          | 1740                    | 1560          |
| 3300                 | 332 | 12.5 × 35.5  | 0.026                       | 0.052              | 2230           | 1960                    | 16 × 20       | 0.031              | 0.062          | 1850                    | 1660          |
| 3900                 | 392 | 12.5 × 40    | 0.024                       | 0.048              | 2460           | 2120                    | 18 × 20       | 0.028              | 0.056          | 2050                    | 1840          |
| 4700                 | 472 | 16 × 31.5    | 0.023                       | 0.046              | 2420           | 2170                    | 18 × 25       | 0.026              | 0.052          | 2350                    | 2020          |
| 5600                 | 562 | 16 × 35.5    | 0.021                       | 0.042              | 2610           | 2340                    | 18 × 25       | 0.024              | 0.048          | 2440                    | 2100          |
| 6800                 | 682 | 16 × 35.5    | 0.020                       | 0.040              | 2770           | 2410                    | 18 × 31.5     | 0.022              | 0.044          | 2720                    | 2280          |
| 8200                 | 822 | 16 × 40      | 0.019                       | 0.038              | 3110           | 2530                    | 18 × 35.5     | 0.021              | 0.042          | 3050                    | 2420          |
| 10000                | 103 | 18 × 40      | 0.017                       | 0.034              | 3300           | 2730                    |               |                    |                |                         |               |

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

## ■ Standard Ratings

| <div> <div>V(Code)</div> <div>Size Code</div> <div>Item</div> <div>Code</div> </div> |     | 16 (1C)                     |                    |                |                                              |               |                             |                    |                |                                              |               |
|--------------------------------------------------------------------------------------|-----|-----------------------------|--------------------|----------------|----------------------------------------------|---------------|-----------------------------|--------------------|----------------|----------------------------------------------|---------------|
|                                                                                      |     | —                           |                    |                |                                              |               | 6                           |                    |                |                                              |               |
|                                                                                      |     | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mArms)                         |               | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mArms)                         |               |
|                                                                                      |     |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / $\frac{10\text{kHz}}{200\text{kHz}}$ | 105°C / 120Hz |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / $\frac{10\text{kHz}}{200\text{kHz}}$ | 105°C / 120Hz |
| 47                                                                                   | 470 | 5 × 11                      | 0.80               | 1.60           | 155                                          | 92            |                             |                    |                |                                              |               |
| 56                                                                                   | 560 | 5 × 11                      | 0.65               | 1.30           | 175                                          | 105           |                             |                    |                |                                              |               |
| 68                                                                                   | 680 | 6.3 × 11                    | 0.50               | 1.00           | 220                                          | 135           |                             |                    |                |                                              |               |
| 82                                                                                   | 820 | 6.3 × 11                    | 0.42               | 0.84           | 240                                          | 155           |                             |                    |                |                                              |               |
| 100                                                                                  | 101 | 6.3 × 11                    | 0.35               | 0.70           | 265                                          | 175           |                             |                    |                |                                              |               |
| 120                                                                                  | 121 | 6.3 × 11                    | 0.29               | 0.58           | 290                                          | 195           |                             |                    |                |                                              |               |
| 150                                                                                  | 151 | 6.3 × 15                    | 0.23               | 0.46           | 375                                          | 260           |                             |                    |                |                                              |               |
| 180                                                                                  | 181 | 6.3 × 15                    | 0.20               | 0.40           | 405                                          | 285           |                             |                    |                |                                              |               |
| 220                                                                                  | 221 | 8 × 11.5                    | 0.16               | 0.32           | 460                                          | 335           |                             |                    |                |                                              |               |
| 270                                                                                  | 271 | 8 × 15                      | 0.14               | 0.28           | 550                                          | 410           | 10 × 12.5                   | 0.14               | 0.28           | 635                                          | 430           |
| 330                                                                                  | 331 | 8 × 15                      | 0.12               | 0.24           | 595                                          | 455           | 10 × 12.5                   | 0.12               | 0.24           | 670                                          | 480           |
| 390                                                                                  | 391 | 8 × 20                      | 0.10               | 0.20           | 730                                          | 570           | 10 × 15                     | 0.10               | 0.20           | 730                                          | 570           |
| 470                                                                                  | 471 | 8 × 20                      | 0.090              | 0.18           | 770                                          | 615           | 10 × 15                     | 0.090              | 0.18           | 825                                          | 615           |
| 560                                                                                  | 561 | 10 × 20                     | 0.075              | 0.15           | 950                                          | 770           | 12.5 × 15                   | 0.080              | 0.16           | 920                                          | 745           |
| 680                                                                                  | 681 | 10 × 20                     | 0.065              | 0.13           | 1060                                         | 845           | 12.5 × 15                   | 0.070              | 0.14           | 985                                          | 815           |
| 820                                                                                  | 821 | 10 × 25                     | 0.055              | 0.11           | 1260                                         | 1030          | 12.5 × 15                   | 0.060              | 0.12           | 1060                                         | 895           |
| 1000                                                                                 | 102 | 10 × 31.5                   | 0.047              | 0.094          | 1410                                         | 1210          | 16 × 15                     | 0.055              | 0.11           | 1270                                         | 1090          |
| 1200                                                                                 | 122 | 12.5 × 20                   | 0.041              | 0.082          | 1430                                         | 1250          | 16 × 15                     | 0.046              | 0.092          | 1390                                         | 1220          |
| 1500                                                                                 | 152 | 12.5 × 25                   | 0.036              | 0.072          | 1700                                         | 1490          | 18 × 15                     | 0.041              | 0.082          | 1560                                         | 1400          |
| 1800                                                                                 | 182 | 12.5 × 31.5                 | 0.032              | 0.064          | 1880                                         | 1690          | 16 × 20                     | 0.037              | 0.074          | 1700                                         | 1530          |
| 2200                                                                                 | 222 | 12.5 × 31.5                 | 0.028              | 0.056          | 2010                                         | 1800          | 16 × 20                     | 0.033              | 0.066          | 1800                                         | 1620          |
| 2700                                                                                 | 272 | 12.5 × 35.5                 | 0.025              | 0.050          | 2230                                         | 1990          | 16 × 25                     | 0.030              | 0.060          | 2190                                         | 1800          |
| 3300                                                                                 | 332 | 12.5 × 40                   | 0.023              | 0.046          | 2460                                         | 2160          | 18 × 20                     | 0.027              | 0.054          | 2090                                         | 1880          |
| 3900                                                                                 | 392 | 16 × 31.5                   | 0.022              | 0.044          | 2510                                         | 2220          | 18 × 25                     | 0.025              | 0.050          | 2350                                         | 2060          |
| 4700                                                                                 | 472 | 16 × 35.5                   | 0.020              | 0.040          | 2770                                         | 2410          | 18 × 31.5                   | 0.023              | 0.046          | 2720                                         | 2240          |
| 5600                                                                                 | 562 | 16 × 40                     | 0.019              | 0.038          | 3110                                         | 2530          | 18 × 35.5                   | 0.022              | 0.044          | 2620                                         | 2350          |
| 6800                                                                                 | 682 | 18 × 35.5                   | 0.018              | 0.036          | 3050                                         | 2610          |                             |                    |                |                                              |               |
| 8200                                                                                 | 822 | 18 × 40                     | 0.017              | 0.034          | 3300                                         | 2730          |                             |                    |                |                                              |               |

| <div> <div>V(Code)</div> <div>Size Code</div> <div>Item</div> <div>Code</div> </div> |     | 25 (1E)                     |                    |                |                                              |               |                             |                    |                |                                              |               |
|--------------------------------------------------------------------------------------|-----|-----------------------------|--------------------|----------------|----------------------------------------------|---------------|-----------------------------|--------------------|----------------|----------------------------------------------|---------------|
|                                                                                      |     | —                           |                    |                |                                              |               | 6                           |                    |                |                                              |               |
|                                                                                      |     | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mArms)                         |               | Case size<br>φD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mArms)                         |               |
|                                                                                      |     |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / $\frac{10\text{kHz}}{200\text{kHz}}$ | 105°C / 120Hz |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / $\frac{10\text{kHz}}{200\text{kHz}}$ | 105°C / 120Hz |
| 33                                                                                   | 330 | 5 × 11                      | 0.80               | 1.60           | 155                                          | 88            |                             |                    |                |                                              |               |
| 39                                                                                   | 390 | 5 × 11                      | 0.65               | 1.30           | 175                                          | 100           |                             |                    |                |                                              |               |
| 47                                                                                   | 470 | 6.3 × 11                    | 0.55               | 1.10           | 210                                          | 125           |                             |                    |                |                                              |               |
| 56                                                                                   | 560 | 6.3 × 11                    | 0.44               | 0.88           | 235                                          | 140           |                             |                    |                |                                              |               |
| 68                                                                                   | 680 | 6.3 × 11                    | 0.36               | 0.72           | 260                                          | 160           |                             |                    |                |                                              |               |
| 82                                                                                   | 820 | 6.3 × 11                    | 0.30               | 0.60           | 285                                          | 180           |                             |                    |                |                                              |               |
| 100                                                                                  | 101 | 6.3 × 15                    | 0.24               | 0.48           | 370                                          | 245           |                             |                    |                |                                              |               |
| 120                                                                                  | 121 | 6.3 × 15                    | 0.20               | 0.40           | 405                                          | 275           |                             |                    |                |                                              |               |
| 150                                                                                  | 151 | 8 × 11.5                    | 0.16               | 0.32           | 460                                          | 320           |                             |                    |                |                                              |               |
| 180                                                                                  | 181 | 8 × 15                      | 0.14               | 0.28           | 550                                          | 390           | 10 × 12.5                   | 0.15               | 0.30           | 635                                          | 395           |
| 220                                                                                  | 221 | 8 × 15                      | 0.11               | 0.22           | 625                                          | 455           | 10 × 12.5                   | 0.13               | 0.26           | 670                                          | 435           |
| 270                                                                                  | 271 | 8 × 20                      | 0.095              | 0.19           | 750                                          | 560           | 10 × 15                     | 0.11               | 0.22           | 700                                          | 525           |
| 330                                                                                  | 331 | 8 × 20                      | 0.085              | 0.17           | 795                                          | 610           | 10 × 15                     | 0.095              | 0.19           | 825                                          | 575           |
| 390                                                                                  | 391 | 10 × 20                     | 0.070              | 0.14           | 985                                          | 770           | 12.5 × 15                   | 0.080              | 0.16           | 920                                          | 720           |
| 470                                                                                  | 471 | 10 × 20                     | 0.065              | 0.13           | 1060                                         | 810           | 12.5 × 15                   | 0.070              | 0.14           | 985                                          | 785           |
| 560                                                                                  | 561 | 10 × 25                     | 0.055              | 0.11           | 1260                                         | 990           | 12.5 × 15                   | 0.060              | 0.12           | 1060                                         | 860           |
| 680                                                                                  | 681 | 10 × 31.5                   | 0.046              | 0.092          | 1420                                         | 1180          | 16 × 15                     | 0.055              | 0.11           | 1270                                         | 1050          |
| 820                                                                                  | 821 | 12.5 × 20                   | 0.041              | 0.082          | 1440                                         | 1210          | 16 × 15                     | 0.049              | 0.098          | 1340                                         | 1130          |
| 1000                                                                                 | 102 | 12.5 × 25                   | 0.036              | 0.072          | 1700                                         | 1430          | 18 × 15                     | 0.043              | 0.086          | 1520                                         | 1310          |
| 1200                                                                                 | 122 | 12.5 × 25                   | 0.032              | 0.064          | 1760                                         | 1550          | 18 × 15                     | 0.039              | 0.078          | 1600                                         | 1400          |
| 1500                                                                                 | 152 | 12.5 × 31.5                 | 0.029              | 0.058          | 1980                                         | 1780          | 16 × 20                     | 0.034              | 0.068          | 1770                                         | 1590          |
| 1800                                                                                 | 182 | 12.5 × 35.5                 | 0.026              | 0.052          | 2230                                         | 1960          | 16 × 25                     | 0.031              | 0.062          | 2190                                         | 1780          |
| 2200                                                                                 | 222 | 12.5 × 40                   | 0.024              | 0.048          | 2460                                         | 2120          | 18 × 20                     | 0.028              | 0.056          | 2050                                         | 1840          |
| 2700                                                                                 | 272 | 16 × 31.5                   | 0.022              | 0.044          | 2510                                         | 2220          | 18 × 25                     | 0.025              | 0.050          | 2350                                         | 2060          |
| 3300                                                                                 | 332 | 16 × 35.5                   | 0.020              | 0.040          | 2770                                         | 2410          | 18 × 31.5                   | 0.023              | 0.046          | 2720                                         | 2240          |
| 3900                                                                                 | 392 | 16 × 40                     | 0.019              | 0.038          | 3110                                         | 2530          | 18 × 35.5                   | 0.021              | 0.042          | 3050                                         | 2420          |
| 4700                                                                                 | 472 | 18 × 40                     | 0.018              | 0.036          | 3300                                         | 2660          |                             |                    |                |                                              |               |

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

PM series

## ■ Standard Ratings

| Cap.(μF) |     | V(Code)<br>Size code<br>Item<br>Code | 35 (1V)                     |                    |                |                                    |               |                             |                    |                |                                    |               |
|----------|-----|--------------------------------------|-----------------------------|--------------------|----------------|------------------------------------|---------------|-----------------------------|--------------------|----------------|------------------------------------|---------------|
|          |     |                                      | —                           |                    |                |                                    | 6             |                             |                    |                |                                    |               |
|          |     |                                      | Case size<br>ΦD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mA Arms)             |               | Case size<br>ΦD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mA Arms)             |               |
|          |     |                                      |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / <sup>10kHz to</sup> 200kHz | 105°C / 120Hz |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / <sup>10kHz to</sup> 200kHz | 105°C / 120Hz |
| 22       | 220 |                                      | 5 × 11                      | 0.75               | 1.50           | 160                                | 85            |                             |                    |                |                                    |               |
| 27       | 270 |                                      | 5 × 11                      | 0.60               | 1.20           | 180                                | 99            |                             |                    |                |                                    |               |
| 33       | 330 |                                      | 6.3 × 11                    | 0.49               | 0.98           | 225                                | 125           |                             |                    |                |                                    |               |
| 39       | 390 |                                      | 6.3 × 11                    | 0.41               | 0.82           | 245                                | 140           |                             |                    |                |                                    |               |
| 47       | 470 |                                      | 6.3 × 11                    | 0.34               | 0.68           | 270                                | 160           |                             |                    |                |                                    |               |
| 56       | 560 |                                      | 6.3 × 11                    | 0.28               | 0.56           | 295                                | 180           |                             |                    |                |                                    |               |
| 68       | 680 |                                      | 6.3 × 15                    | 0.24               | 0.48           | 370                                | 230           |                             |                    |                |                                    |               |
| 82       | 820 |                                      | 6.3 × 15                    | 0.19               | 0.38           | 415                                | 265           |                             |                    |                |                                    |               |
| 100      | 101 |                                      | 8 × 11.5                    | 0.16               | 0.32           | 460                                | 305           |                             |                    |                |                                    |               |
| 120      | 121 |                                      | 8 × 15                      | 0.14               | 0.28           | 550                                | 370           | 10 × 12.5                   | 0.15               | 0.30           | 635                                | 375           |
| 150      | 151 |                                      | 8 × 15                      | 0.12               | 0.24           | 595                                | 415           | 10 × 12.5                   | 0.12               | 0.24           | 680                                | 435           |
| 180      | 181 |                                      | 8 × 20                      | 0.10               | 0.20           | 730                                | 520           | 10 × 15                     | 0.11               | 0.22           | 700                                | 500           |
| 220      | 221 |                                      | 8 × 20                      | 0.085              | 0.17           | 795                                | 580           | 10 × 15                     | 0.090              | 0.18           | 825                                | 560           |
| 270      | 271 |                                      | 10 × 20                     | 0.070              | 0.14           | 985                                | 735           | 12.5 × 15                   | 0.080              | 0.16           | 920                                | 690           |
| 330      | 331 |                                      | 10 × 20                     | 0.060              | 0.12           | 1060                               | 810           | 12.5 × 15                   | 0.065              | 0.13           | 1020                               | 780           |
| 390      | 391 |                                      | 10 × 25                     | 0.055              | 0.11           | 1260                               | 955           | 12.5 × 15                   | 0.060              | 0.12           | 1060                               | 825           |
| 470      | 471 |                                      | 10 × 31.5                   | 0.046              | 0.092          | 1450                               | 1130          | 16 × 15                     | 0.055              | 0.11           | 1270                               | 1010          |
| 560      | 561 |                                      | 12.5 × 20                   | 0.041              | 0.082          | 1430                               | 1160          | 16 × 15                     | 0.048              | 0.096          | 1360                               | 1100          |
| 680      | 681 |                                      | 12.5 × 25                   | 0.036              | 0.072          | 1700                               | 1370          | 18 × 15                     | 0.042              | 0.084          | 1540                               | 1270          |
| 820      | 821 |                                      | 12.5 × 25                   | 0.032              | 0.064          | 1760                               | 1490          | 18 × 15                     | 0.038              | 0.076          | 1620                               | 1370          |
| 1000     | 102 |                                      | 12.5 × 31.5                 | 0.029              | 0.058          | 1980                               | 1710          | 16 × 20                     | 0.034              | 0.068          | 1770                               | 1530          |
| 1200     | 122 |                                      | 12.5 × 35.5                 | 0.026              | 0.052          | 2230                               | 1920          | 16 × 25                     | 0.031              | 0.062          | 2190                               | 1740          |
| 1500     | 152 |                                      | 12.5 × 40                   | 0.024              | 0.048          | 2460                               | 2120          | 18 × 20                     | 0.028              | 0.056          | 2050                               | 1840          |
| 1800     | 182 |                                      | 16 × 31.5                   | 0.022              | 0.044          | 2510                               | 2220          | 18 × 25                     | 0.025              | 0.050          | 2350                               | 2060          |
| 2200     | 222 |                                      | 16 × 35.5                   | 0.020              | 0.040          | 2770                               | 2410          | 18 × 31.5                   | 0.023              | 0.046          | 2720                               | 2240          |
| 2700     | 272 |                                      | 16 × 40                     | 0.018              | 0.036          | 3110                               | 2610          | 18 × 35.5                   | 0.021              | 0.042          | 3050                               | 2420          |
| 3300     | 332 |                                      | 18 × 40                     | 0.017              | 0.034          | 3300                               | 2730          |                             |                    |                |                                    |               |

| Cap.(μF) |     | V(Code)<br>Size code<br>Item<br>Code | 50 (1H)                     |                    |                |                                    |               |                             |                    |                |                                    |               |
|----------|-----|--------------------------------------|-----------------------------|--------------------|----------------|------------------------------------|---------------|-----------------------------|--------------------|----------------|------------------------------------|---------------|
|          |     |                                      | —                           |                    |                |                                    | 6             |                             |                    |                |                                    |               |
|          |     |                                      | Case size<br>ΦD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mA Arms)             |               | Case size<br>ΦD × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mA Arms)             |               |
|          |     |                                      |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / <sup>10kHz to</sup> 200kHz | 105°C / 120Hz |                             | 20°C / 100kHz      | −10°C / 100kHz | 105°C / <sup>10kHz to</sup> 200kHz | 105°C / 120Hz |
| 0.47     | R47 |                                      | 5 × 11                      | 23.0               | 46.0           | 22                                 | 11            |                             |                    |                |                                    |               |
| 0.68     | R68 |                                      | 5 × 11                      | 16.0               | 32.0           | 28                                 | 14            |                             |                    |                |                                    |               |
| 1        | 010 |                                      | 5 × 11                      | 11.0               | 22.0           | 36                                 | 18            |                             |                    |                |                                    |               |
| 1.5      | 1R5 |                                      | 5 × 11                      | 7.50               | 15.0           | 45                                 | 22            |                             |                    |                |                                    |               |
| 2.2      | 2R2 |                                      | 5 × 11                      | 5.00               | 10.0           | 54                                 | 27            |                             |                    |                |                                    |               |
| 3.3      | 3R3 |                                      | 5 × 11                      | 3.30               | 6.60           | 66                                 | 33            |                             |                    |                |                                    |               |
| 4.7      | 4R7 |                                      | 5 × 11                      | 2.20               | 4.40           | 81                                 | 40            |                             |                    |                |                                    |               |
| 6.8      | 6R8 |                                      | 5 × 11                      | 1.80               | 3.60           | 91                                 | 45            |                             |                    |                |                                    |               |
| 10       | 100 |                                      | 5 × 11                      | 1.40               | 2.80           | 115                                | 57            |                             |                    |                |                                    |               |
| 12       | 120 |                                      | 5 × 11                      | 1.20               | 2.40           | 125                                | 62            |                             |                    |                |                                    |               |
| 15       | 150 |                                      | 5 × 11                      | 0.93               | 1.86           | 145                                | 72            |                             |                    |                |                                    |               |
| 18       | 180 |                                      | 5 × 11                      | 0.80               | 1.60           | 165                                | 79            |                             |                    |                |                                    |               |
| 22       | 220 |                                      | 6.3 × 11                    | 0.65               | 1.30           | 195                                | 100           |                             |                    |                |                                    |               |
| 27       | 270 |                                      | 6.3 × 11                    | 0.53               | 1.06           | 215                                | 115           |                             |                    |                |                                    |               |
| 33       | 330 |                                      | 6.3 × 11                    | 0.43               | 0.86           | 240                                | 135           |                             |                    |                |                                    |               |
| 39       | 390 |                                      | 6.3 × 11                    | 0.36               | 0.72           | 260                                | 150           |                             |                    |                |                                    |               |
| 47       | 470 |                                      | 6.3 × 15                    | 0.30               | 0.60           | 330                                | 195           |                             |                    |                |                                    |               |
| 56       | 560 |                                      | 6.3 × 15                    | 0.25               | 0.50           | 360                                | 220           |                             |                    |                |                                    |               |
| 68       | 680 |                                      | 8 × 11.5                    | 0.20               | 0.40           | 415                                | 255           |                             |                    |                |                                    |               |
| 82       | 820 |                                      | 8 × 15                      | 0.17               | 0.34           | 505                                | 320           | 10 × 12.5                   | 0.18               | 0.36           | 530                                | 330           |
| 100      | 101 |                                      | 8 × 20                      | 0.14               | 0.28           | 620                                | 410           | 10 × 15                     | 0.16               | 0.32           | 580                                | 385           |
| 120      | 121 |                                      | 8 × 20                      | 0.12               | 0.24           | 755                                | 455           | 10 × 15                     | 0.13               | 0.26           | 755                                | 435           |
| 150      | 151 |                                      | 10 × 20                     | 0.10               | 0.20           | 820                                | 570           | 12.5 × 15                   | 0.11               | 0.22           | 785                                | 545           |
| 180      | 181 |                                      | 10 × 20                     | 0.085              | 0.17           | 945                                | 635           | 12.5 × 15                   | 0.095              | 0.19           | 845                                | 605           |
| 220      | 221 |                                      | 10 × 25                     | 0.075              | 0.15           | 1150                               | 760           | 12.5 × 15                   | 0.080              | 0.16           | 920                                | 670           |
| 270      | 271 |                                      | 10 × 31.5                   | 0.065              | 0.13           | 1200                               | 900           | 16 × 15                     | 0.070              | 0.14           | 1120                               | 840           |
| 330      | 331 |                                      | 10 × 31.5                   | 0.055              | 0.11           | 1300                               | 995           | 16 × 15                     | 0.060              | 0.12           | 1210                               | 925           |
| 390      | 391 |                                      | 12.5 × 25                   | 0.048              | 0.096          | 1440                               | 1120          | 16 × 15                     | 0.055              | 0.11           | 1270                               | 990           |
| 470      | 471 |                                      | 12.5 × 25                   | 0.044              | 0.088          | 1500                               | 1190          | 18 × 15                     | 0.046              | 0.092          | 1470                               | 1170          |
| 560      | 561 |                                      | 12.5 × 31.5                 | 0.040              | 0.080          | 1720                               | 1360          | 16 × 20                     | 0.044              | 0.088          | 1550                               | 1260          |
| 680      | 681 |                                      | 12.5 × 35.5                 | 0.036              | 0.072          | 1900                               | 1530          | 16 × 20                     | 0.040              | 0.080          | 1630                               | 1350          |
| 820      | 821 |                                      | 12.5 × 40                   | 0.033              | 0.066          | 2120                               | 1700          | 18 × 20                     | 0.036              | 0.072          | 1810                               | 1530          |
| 1000     | 102 |                                      | 16 × 31.5                   | 0.030              | 0.060          | 2150                               | 1830          | 18 × 25                     | 0.033              | 0.066          | 2020                               | 1730          |
| 1200     | 122 |                                      | 16 × 35.5                   | 0.028              | 0.056          | 2320                               | 1990          | 18 × 31.5                   | 0.031              | 0.062          | 2140                               | 1880          |
| 1500     | 152 |                                      | 16 × 40                     | 0.026              | 0.052          | 2650                               | 2170          | 18 × 31.5                   | 0.029              | 0.058          | 2340                               | 1990          |
| 1800     | 182 |                                      | 18 × 35.5                   | 0.025              | 0.050          | 2620                               | 2210          |                             |                    |                |                                    |               |
| 2200     | 222 |                                      | 18 × 40                     | 0.024              | 0.048          | 2790                               | 2300          |                             |                    |                |                                    |               |

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

## ■ Standard Ratings

| Cap.(μF) |     | V(Code)     | 63 (1J)                      |                    |                |                            |               |                              |                    |                |                            |               |  |
|----------|-----|-------------|------------------------------|--------------------|----------------|----------------------------|---------------|------------------------------|--------------------|----------------|----------------------------|---------------|--|
|          |     | Size code   | —                            |                    |                |                            |               |                              | 6                  |                |                            |               |  |
|          |     | Item        | Case size<br>φ D × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mArms)       |               | Case size<br>φ D × 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     |     |             |                              |                    |                |                            |               |                              |                    |                |                            |               |  |
| 10       | 100 | 5 × 11      | 1.06                         | 2.12               | 135            | 67                         |               |                              |                    |                |                            |               |  |
| 12       | 120 | 5 × 11      | 0.93                         | 1.86               | 145            | 72                         |               |                              |                    |                |                            |               |  |
| 15       | 150 | 6.3 × 11    | 0.73                         | 1.46               | 185            | 92                         |               |                              |                    |                |                            |               |  |
| 18       | 180 | 6.3 × 11    | 0.63                         | 1.26               | 195            | 100                        |               |                              |                    |                |                            |               |  |
| 22       | 220 | 6.3 × 11    | 0.52                         | 1.04               | 215            | 110                        |               |                              |                    |                |                            |               |  |
| 27       | 270 | 6.3 × 11    | 0.43                         | 0.86               | 240            | 130                        |               |                              |                    |                |                            |               |  |
| 33       | 330 | 6.3 × 15    | 0.35                         | 0.70               | 305            | 170                        |               |                              |                    |                |                            |               |  |
| 39       | 390 | 6.3 × 15    | 0.30                         | 0.60               | 330            | 190                        |               |                              |                    |                |                            |               |  |
| 47       | 470 | 8 × 11.5    | 0.25                         | 0.50               | 365            | 215                        |               |                              |                    |                |                            |               |  |
| 56       | 560 | 8 × 15      | 0.21                         | 0.42               | 450            | 275                        | 10 × 12.5     | 0.23                         | 0.46               | 450            | 275                        |               |  |
| 68       | 680 | 8 × 15      | 0.17                         | 0.34               | 500            | 315                        | 10 × 12.5     | 0.19                         | 0.38               | 495            | 310                        |               |  |
| 82       | 820 | 8 × 20      | 0.15                         | 0.30               | 600            | 385                        | 10 × 15       | 0.16                         | 0.32               | 580            | 375                        |               |  |
| 100      | 101 | 10 × 20     | 0.12                         | 0.24               | 750            | 495                        | 12.5 × 15     | 0.14                         | 0.28               | 695            | 460                        |               |  |
| 120      | 121 | 10 × 20     | 0.10                         | 0.20               | 820            | 555                        | 12.5 × 15     | 0.12                         | 0.24               | 750            | 510                        |               |  |
| 150      | 151 | 10 × 25     | 0.090                        | 0.18               | 950            | 665                        | 12.5 × 15     | 0.095                        | 0.19               | 845            | 590                        |               |  |
| 180      | 181 | 10 × 31.5   | 0.075                        | 0.15               | 1110           | 790                        | 16 × 15       | 0.080                        | 0.16               | 1050           | 750                        |               |  |
| 220      | 221 | 12.5 × 20   | 0.065                        | 0.13               | 1140           | 835                        | 16 × 15       | 0.070                        | 0.14               | 1120           | 820                        |               |  |
| 270      | 271 | 12.5 × 25   | 0.055                        | 0.11               | 1340           | 1000                       | 18 × 15       | 0.060                        | 0.12               | 1290           | 965                        |               |  |
| 330      | 331 | 12.5 × 25   | 0.049                        | 0.098              | 1420           | 1090                       | 18 × 15       | 0.050                        | 0.10               | 1410           | 1080                       |               |  |
| 390      | 391 | 12.5 × 31.5 | 0.043                        | 0.086              | 1620           | 1260                       | 16 × 20       | 0.047                        | 0.094              | 1500           | 1170                       |               |  |
| 470      | 471 | 12.5 × 35.5 | 0.039                        | 0.078              | 1780           | 1420                       | 16 × 25       | 0.042                        | 0.084              | 1700           | 1350                       |               |  |
| 560      | 561 | 12.5 × 40   | 0.035                        | 0.070              | 1950           | 1580                       | 18 × 20       | 0.039                        | 0.078              | 1730           | 1400                       |               |  |
| 680      | 681 | 16 × 31.5   | 0.032                        | 0.064              | 2050           | 1700                       | 18 × 25       | 0.035                        | 0.070              | 1940           | 1610                       |               |  |
| 820      | 821 | 16 × 35.5   | 0.029                        | 0.058              | 2220           | 1880                       | 18 × 31.5     | 0.032                        | 0.064              | 2110           | 1780                       |               |  |
| 1000     | 102 | 16 × 40     | 0.027                        | 0.054              | 2370           | 2050                       | 18 × 35.5     | 0.029                        | 0.058              | 2280           | 1970                       |               |  |
| 1200     | 122 | 18 × 40     | 0.025                        | 0.050              | 2510           | 2210                       |               |                              |                    |                |                            |               |  |

| Cap.(μF) |     | V(Code)     | Size code | Item  | 80 (1K)                      |                    |                |                            |               |                              |                    |                |                            |               |
|----------|-----|-------------|-----------|-------|------------------------------|--------------------|----------------|----------------------------|---------------|------------------------------|--------------------|----------------|----------------------------|---------------|
|          |     |             |           |       | —                            |                    |                |                            |               |                              | 6                  |                |                            |               |
|          |     |             |           |       | Case size<br>φ D × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple (mArms)       |               | Case size<br>φ D × 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  | 150                          | 58                 |                |                            |               |                              |                    |                |                            |               |
| 22       | 220 | 6.3 × 15    | 0.77      | 2.10  | 180                          | 71                 |                |                            |               |                              |                    |                |                            |               |
| 27       | 270 | 6.3 × 15    | 0.63      | 1.70  | 220                          | 80                 |                |                            |               |                              |                    |                |                            |               |
| 33       | 330 | 8 × 11.5    | 0.53      | 1.40  | 275                          | 132                |                |                            |               |                              |                    |                |                            |               |
| 39       | 390 | 8 × 15      | 0.46      | 1.20  | 300                          | 156                | 10 × 12.5      | 0.49                       | 1.30          | 380                          | 155                |                |                            |               |
| 47       | 470 | 8 × 15      | 0.39      | 1.10  | 360                          | 175                | 10 × 12.5      | 0.42                       | 1.10          | 410                          | 174                |                |                            |               |
| 56       | 560 | 8 × 20      | 0.34      | 0.92  | 490                          | 208                | 10 × 15        | 0.36                       | 0.97          | 500                          | 202                |                |                            |               |
| 68       | 680 | 10 × 20     | 0.28      | 0.76  | 570                          | 264                | 12.5 × 15      | 0.31                       | 0.84          | 520                          | 249                |                |                            |               |
| 82       | 820 | 10 × 20     | 0.25      | 0.68  | 620                          | 284                | 12.5 × 15      | 0.27                       | 0.73          | 560                          | 273                |                |                            |               |
| 100      | 101 | 10 × 25     | 0.21      | 0.57  | 795                          | 347                | 12.5 × 15      | 0.23                       | 0.62          | 605                          | 308                |                |                            |               |
| 120      | 121 | 10 × 31.5   | 0.18      | 0.49  | 870                          | 406                | 16 × 15        | 0.20                       | 0.54          | 663                          | 444                |                |                            |               |
| 150      | 151 | 10 × 31.5   | 0.15      | 0.41  | 955                          | 459                | 16 × 15        | 0.18                       | 0.47          | 699                          | 484                |                |                            |               |
| 180      | 181 | 12.5 × 25   | 0.13      | 0.35  | 1040                         | 520                | 16 × 15        | 0.15                       | 0.41          | 766                          | 543                |                |                            |               |
| 220      | 221 | 12.5 × 31.5 | 0.12      | 0.32  | 1160                         | 595                | 18 × 15        | 0.13                       | 0.35          | 881                          | 643                |                |                            |               |
| 270      | 271 | 12.5 × 31.5 | 0.10      | 0.27  | 1270                         | 667                | 16 × 20        | 0.11                       | 0.30          | 1240                         | 742                |                |                            |               |
| 330      | 331 | 12.5 × 35.5 | 0.088     | 0.24  | 1450                         | 767                | 16 × 25        | 0.099                      | 0.27          | 1440                         | 874                |                |                            |               |
| 390      | 391 | 12.5 × 40   | 0.078     | 0.21  | 1610                         | 822                | 18 × 20        | 0.089                      | 0.24          | 1450                         | 908                |                |                            |               |
| 470      | 471 | 16 × 31.5   | 0.069     | 0.19  | 1790                         | 1150               | 18 × 25        | 0.080                      | 0.22          | 1650                         | 1060               |                |                            |               |
| 560      | 561 | 16 × 35.5   | 0.062     | 0.17  | 2000                         | 1300               | 18 × 31.5      | 0.072                      | 0.19          | 1750                         | 1210               |                |                            |               |
| 680      | 681 | 16 × 40     | 0.055     | 0.15  | 2200                         | 1470               | 18 × 31.5      | 0.065                      | 0.18          | 1850                         | 1300               |                |                            |               |
| 820      | 821 | 18 × 35.5   | 0.049     | 0.13  | 2250                         | 1590               |                |                            |               |                              |                    |                |                            |               |
| 1000     | 102 | 18 × 40     | 0.044     | 0.12  | 2370                         | 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<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      | 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                        | 150                | 57             |                            |               |                             |                    |                |                            |               |
| 15        | 150     | 6.3 × 15    | 0.81  | 2.20                        | 180                | 65             |                            |               |                             |                    |                |                            |               |
| 18        | 180     | 6.3 × 15    | 0.67  | 1.80                        | 220                | 73             |                            |               |                             |                    |                |                            |               |
| 22        | 220     | 8 × 11.5    | 0.55  | 1.50                        | 275                | 122            |                            |               |                             |                    |                |                            |               |
| 27        | 270     | 8 × 15      | 0.47  | 1.30                        | 300                | 146            | 10 × 12.5                  | 0.50          | 1.40                        | 380                | 145            |                            |               |
| 33        | 330     | 8 × 15      | 0.38  | 1.00                        | 360                | 169            | 10 × 12.5                  | 0.42          | 1.10                        | 410                | 166            |                            |               |
| 39        | 390     | 8 × 20      | 0.33  | 0.89                        | 490                | 202            | 10 × 15                    | 0.36          | 0.97                        | 500                | 193            |                            |               |
| 47        | 470     | 10 × 20     | 0.28  | 0.76                        | 570                | 252            | 12.5 × 15                  | 0.31          | 0.84                        | 520                | 239            |                            |               |
| 56        | 560     | 10 × 20     | 0.24  | 0.65                        | 620                | 274            | 12.5 × 15                  | 0.27          | 0.73                        | 560                | 258            |                            |               |
| 68        | 680     | 10 × 25     | 0.21  | 0.57                        | 795                | 326            | 12.5 × 15                  | 0.23          | 0.62                        | 605                | 289            |                            |               |
| 82        | 820     | 10 × 31.5   | 0.18  | 0.49                        | 870                | 386            | 16 × 15                    | 0.19          | 0.51                        | 681                | 433            |                            |               |
| 100       | 101     | 10 × 31.5   | 0.15  | 0.41                        | 955                | 438            | 16 × 15                    | 0.17          | 0.46                        | 719                | 475            |                            |               |
| 120       | 121     | 12.5 × 25   | 0.13  | 0.35                        | 1040               | 519            | 16 × 15                    | 0.14          | 0.38                        | 793                | 531            |                            |               |
| 150       | 151     | 12.5 × 25   | 0.11  | 0.30                        | 1120               | 553            | 18 × 15                    | 0.12          | 0.32                        | 917                | 635            |                            |               |
| 180       | 181     | 12.5 × 31.5 | 0.098 | 0.26                        | 1270               | 641            | 16 × 20                    | 0.11          | 0.30                        | 1240               | 706            |                            |               |
| 220       | 221     | 12.5 × 35.5 | 0.087 | 0.23                        | 1450               | 730            | 16 × 25                    | 0.093         | 0.25                        | 1440               | 854            |                            |               |
| 270       | 271     | 12.5 × 40   | 0.072 | 0.19                        | 1610               | 843            | 18 × 20                    | 0.080         | 0.22                        | 1450               | 918            |                            |               |
| 330       | 331     | 16 × 31.5   | 0.062 | 0.17                        | 1790               | 1160           | 18 × 25                    | 0.070         | 0.19                        | 1650               | 1080           |                            |               |
| 390       | 391     | 16 × 35.5   | 0.053 | 0.14                        | 2000               | 1340           | 18 × 31.5                  | 0.062         | 0.17                        | 1850               | 1240           |                            |               |
| 470       | 471     | 16 × 40     | 0.047 | 0.13                        | 2200               | 1530           | 18 × 35.5                  | 0.056         | 0.15                        | 1970               | 1410           |                            |               |
| 560       | 561     | 18 × 35.5   | 0.041 | 0.11                        | 2250               | 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 |           |     | Case size<br>φD × L (mm) | ※   |
| 100      | 101     | 16 × 35.5 | 330 | 18 × 40   | 345 | 18 × 40   | 345 |           |     |           |     |           |     |                          |     |

※ Rated ripple current (mAmps) at 105°C 120Hz