

## FH Series 105°C high ripple current at frequency range

## Feature

- ◆ New innovative electrolyte is employed to minimize ESR
- ◆ Long life 4000 to 10000 hours at 105°C
- ◆ Non solvent proof type
- ◆ 6.3 to 100VDC newly type
- ◆ RoHS compliance.

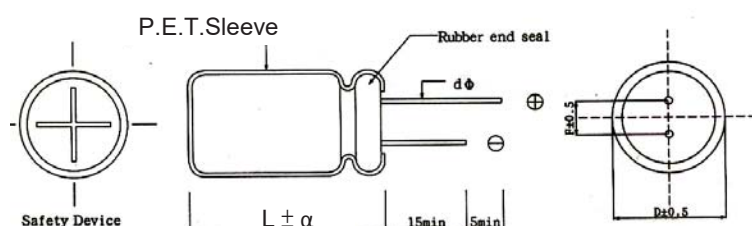
## Specification

| Item                                                                                                                                                                                                                                                                                        | Performance Characteristics                                                                                                                                                                                                                                                                                                                                                                                                     |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|---------|----------|----|----|-----|--|----------------------|-----|----|----|----|----|----|----|-----|------------|----------------------|-----|----|----|----|----|----|----|-----|---------------|---|---|---|---|---|---|---|---|---------------|---|---|---|---|---|---|---|---|
| Operating Temperature                                                                                                                                                                                                                                                                       | -40 to +105℃                                                                                                                                                                                                                                                                                                                                                                                                                    |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Rated Voltage Range                                                                                                                                                                                                                                                                         | 6.3~100V.DC                                                                                                                                                                                                                                                                                                                                                                                                                     |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| capacitance range                                                                                                                                                                                                                                                                           | 6.8~18000uF                                                                                                                                                                                                                                                                                                                                                                                                                     |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Capacitance Tolerance                                                                                                                                                                                                                                                                       | ±20% (120Hz, +20℃)                                                                                                                                                                                                                                                                                                                                                                                                              |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Leakage Current<br>(+20℃,max.)                                                                                                                                                                                                                                                              | I≦0.01CV or 3μA whichever is greater, with rated working voltage applied(After 2 minutes).<br>I= Leakage Current(μA) C= Rated Capacitance V= Rated voltage(V)                                                                                                                                                                                                                                                                   |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Dissipation Factor<br>(tanδ, at 20℃, 120Hz)                                                                                                                                                                                                                                                 | <table><tr><td>working voltage(VDC)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td>D.F.(%)max</td><td>22</td><td>19</td><td>16</td><td>14</td><td>12</td><td>10</td><td>9</td><td>8</td></tr></table><br>For capacitance > 1000μF,add 2% per another 1000μF                                                                                                         |          |         |         |          |    |    |     |  | working voltage(VDC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | D.F.(%)max | 22                   | 19  | 16 | 14 | 12 | 10 | 9  | 8  |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| working voltage(VDC)                                                                                                                                                                                                                                                                        | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                             | 10       | 16      | 25      | 35       | 50 | 63 | 100 |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| D.F.(%)max                                                                                                                                                                                                                                                                                  | 22                                                                                                                                                                                                                                                                                                                                                                                                                              | 19       | 16      | 14      | 12       | 10 | 9  | 8   |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Low Temperature<br>Characteristics (at 120Hz)                                                                                                                                                                                                                                               | <table><tr><td colspan="10">Impedance ratio max</td></tr><tr><td>Working Voltage(VDC)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td>Z-25℃ / Z+20℃</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z-40℃ / Z+20℃</td><td>8</td><td>6</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table> |          |         |         |          |    |    |     |  | Impedance ratio max  |     |    |    |    |    |    |    |     |            | Working Voltage(VDC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | Z-25℃ / Z+20℃ | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | Z-40℃ / Z+20℃ | 8 | 6 | 4 | 3 | 3 | 3 | 3 | 3 |
| Impedance ratio max                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Working Voltage(VDC)                                                                                                                                                                                                                                                                        | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                             | 10       | 16      | 25      | 35       | 50 | 63 | 100 |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Z-25℃ / Z+20℃                                                                                                                                                                                                                                                                               | 4                                                                                                                                                                                                                                                                                                                                                                                                                               | 3        | 2       | 2       | 2        | 2  | 2  | 2   |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Z-40℃ / Z+20℃                                                                                                                                                                                                                                                                               | 8                                                                                                                                                                                                                                                                                                                                                                                                                               | 6        | 4       | 3       | 3        | 3  | 3  | 3   |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Endurance                                                                                                                                                                                                                                                                                   | Test conditions                                                                                                                                                                                                                                                                                                                                                                                                                 |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
|                                                                                                                                                                                                                                                                                             | Duration time:                                                                                                                                                                                                                                                                                                                                                                                                                  |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
|                                                                                                                                                                                                                                                                                             | size                                                                                                                                                                                                                                                                                                                                                                                                                            |          | φD≦6.3  | ΦD=8,10 | φD≥13    |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
|                                                                                                                                                                                                                                                                                             | voltage                                                                                                                                                                                                                                                                                                                                                                                                                         | 6.3~10WV | 4000hrs | 6000hrs | 8000hrs  |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
|                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 | 16~100WV | 5000hrs | 7000hrs | 10000hrs |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Ambient temperature :+105℃<br>Applied voltage :Rated DC working voltage<br>After test requirement at +20℃<br>Capacitance change : within±25% of the initial measured value<br>Dissipation factor : ≦ 200% of the initial specified value<br>Leakage current : ≦ The initial specified value |                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
| Shelf Life                                                                                                                                                                                                                                                                                  | Test conditions                                                                                                                                                                                                                                                                                                                                                                                                                 |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
|                                                                                                                                                                                                                                                                                             | Duration time :1000Hrs                                                                                                                                                                                                                                                                                                                                                                                                          |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
|                                                                                                                                                                                                                                                                                             | Ambient temperature :+105℃                                                                                                                                                                                                                                                                                                                                                                                                      |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
|                                                                                                                                                                                                                                                                                             | Applied voltage :None                                                                                                                                                                                                                                                                                                                                                                                                           |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |
|                                                                                                                                                                                                                                                                                             | After test requirement at +20℃:Same limits as Endurance.<br>Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.                                                                                                                                                                                                                                                           |          |         |         |          |    |    |     |  |                      |     |    |    |    |    |    |    |     |            |                      |     |    |    |    |    |    |    |     |               |   |   |   |   |   |   |   |   |               |   |   |   |   |   |   |   |   |

## Multiplier for Ripple Current vs.

| CAP( $\mu$ )          | 50(60) | 120  | 400  | 1K   | 10K  | 100K |
|-----------------------|--------|------|------|------|------|------|
| $CAP \leq 10$         | 0.47   | 0.59 | 0.76 | 0.85 | 0.97 | 1.00 |
| $10 < CAP \leq 100$   | 0.52   | 0.62 | 0.80 | 0.89 | 0.97 | 1.00 |
| $100 < CAP \leq 1000$ | 0.58   | 0.72 | 0.84 | 0.90 | 0.98 | 1.00 |
| $1000 < CAP$          | 0.63   | 0.78 | 0.87 | 0.91 | 0.98 | 1.00 |

## Diagram of Dimensions:(unit:mm)



|    |     |     |        |        |     |    |     |
|----|-----|-----|--------|--------|-----|----|-----|
| Dφ | 5   | 6.3 | 8      | 10     | 13  | 16 | 18  |
| F  | 2   | 2.5 | 3.5    | 5.0    | 7.5 |    |     |
| dφ | 0.5 |     | L < 20 | L ≥ 20 | 0.6 |    | 0.8 |
|    |     |     | 0.5    | 0.6    |     |    |     |

|   |        |          |          |        |
|---|--------|----------|----------|--------|
| α | D < 18 | D = 18   |          | D > 18 |
|   |        | L < 35.5 | L ≥ 35.5 |        |
|   | 1.5    | 1.5      | 2.0      | 2.0    |

## Case Size

| WV (Vdc) | Cap (uF) | Size mm | Rated Ripple current (Arms/105°C /100KHz) | Max ESR( Ω) at 20°C /100kHz |
|----------|----------|---------|-------------------------------------------|-----------------------------|
| 6.3      | 150      | 5×11    | 220                                       | 0.550                       |
| 6.3      | 220      | 6.3×11  | 300                                       | 0.260                       |
| 6.3      | 330      | 6.3×11  | 350                                       | 0.210                       |
| 6.3      | 470      | 8×11.5  | 440                                       | 0.140                       |
| 6.3      | 680      | 8×11.5  | 650                                       | 0.130                       |
| 6.3      | 820      | 10×12.5 | 870                                       | 0.090                       |
| 6.3      | 1000     | 8×16    | 850                                       | 0.080                       |
| 6.3      | 1200     | 8×20    | 1060                                      | 0.075                       |
| 6.3      | 1200     | 10×16   | 1220                                      | 0.064                       |
| 6.3      | 1500     | 10×20   | 1410                                      | 0.050                       |
| 6.3      | 1800     | 13×16   | 1460                                      | 0.049                       |
| 6.3      | 2200     | 10×25   | 1660                                      | 0.046                       |
| 6.3      | 2700     | 16×16   | 1950                                      | 0.042                       |
| 6.3      | 3300     | 13×20   | 1910                                      | 0.038                       |
| 6.3      | 3900     | 13×25   | 2240                                      | 0.029                       |
| 6.3      | 3900     | 18×16   | 2220                                      | 0.040                       |
| 6.3      | 4700     | 13×30   | 2660                                      | 0.027                       |
| 6.3      | 5600     | 13×35   | 2890                                      | 0.024                       |
| 6.3      | 5600     | 16×21   | 2540                                      | 0.027                       |
| 6.3      | 6800     | 13×40   | 3360                                      | 0.017                       |
| 6.3      | 6800     | 16×25   | 2940                                      | 0.021                       |
| 6.3      | 6800     | 18×21   | 2870                                      | 0.026                       |
| 6.3      | 8200     | 16×31.5 | 3460                                      | 0.017                       |
| 6.3      | 10000    | 16×35.5 | 3620                                      | 0.015                       |
| 6.3      | 10000    | 18×25   | 3150                                      | 0.019                       |
| 6.3      | 12000    | 16×41   | 4090                                      | 0.013                       |
| 6.3      | 12000    | 18×31.5 | 4180                                      | 0.015                       |
| 6.3      | 15000    | 18×35.5 | 4230                                      | 0.014                       |
| 6.3      | 18000    | 18×41   | 4290                                      | 0.012                       |
| 10       | 100      | 5×11    | 220                                       | 0.580                       |
| 10       | 220      | 6.3×11  | 350                                       | 0.230                       |
| 10       | 330      | 6.3×11  | 450                                       | 0.220                       |
| 10       | 470      | 8×11.5  | 650                                       | 0.130                       |
| 10       | 680      | 8×16    | 850                                       | 0.096                       |
| 10       | 680      | 10×12.5 | 870                                       | 0.085                       |
| 10       | 820      | 10×16   | 950                                       | 0.075                       |
| 10       | 1000     | 8×20    | 1060                                      | 0.072                       |
| 10       | 1000     | 10×16   | 1220                                      | 0.064                       |
| 10       | 1200     | 10×20   | 1410                                      | 0.045                       |
| 10       | 1500     | 10×25   | 1560                                      | 0.043                       |
| 10       | 1500     | 13×16   | 1460                                      | 0.049                       |
| 10       | 2200     | 10×30   | 1920                                      | 0.030                       |
| 10       | 2200     | 13×20   | 1910                                      | 0.035                       |
| 10       | 2200     | 16×16   | 1950                                      | 0.042                       |
| 10       | 2700     | 18×16   | 2220                                      | 0.043                       |
| 10       | 3300     | 13×25   | 2240                                      | 0.029                       |
| 10       | 3900     | 13×30   | 2660                                      | 0.025                       |
| 10       | 3900     | 16×21   | 2540                                      | 0.027                       |
| 10       | 4700     | 13×35   | 2890                                      | 0.020                       |
| 10       | 5600     | 13×40   | 3360                                      | 0.017                       |
| 10       | 5600     | 16×25   | 2940                                      | 0.021                       |
| 10       | 5600     | 18×21   | 2870                                      | 0.026                       |
| 10       | 6800     | 16×31.5 | 3460                                      | 0.017                       |
| 10       | 6800     | 18×25   | 3150                                      | 0.019                       |
| 10       | 8200     | 16×35.5 | 3620                                      | 0.015                       |
| 10       | 8200     | 18×31.5 | 4180                                      | 0.015                       |
| 10       | 10000    | 16×41   | 4090                                      | 0.013                       |
| 10       | 10000    | 18×35.5 | 4230                                      | 0.014                       |
| 10       | 12000    | 18×41   | 4290                                      | 0.012                       |
| 16       | 56       | 5×11    | 220                                       | 0.560                       |

| WV (Vdc) | Cap (uF) | Size mm | Rated Ripple current (Arms/105°C /100KHz) | Max ESR( Ω) at 20°C /100kHz |
|----------|----------|---------|-------------------------------------------|-----------------------------|
| 16       | 100      | 6.3×11  | 300                                       | 0.220                       |
| 16       | 120      | 6.3×11  | 350                                       | 0.215                       |
| 16       | 220      | 8×11.5  | 500                                       | 0.180                       |
| 16       | 330      | 8×11.5  | 650                                       | 0.140                       |
| 16       | 470      | 8×11.5  | 740                                       | 0.100                       |
| 16       | 470      | 8×16    | 850                                       | 0.095                       |
| 16       | 470      | 10×12.5 | 870                                       | 0.085                       |
| 16       | 680      | 8×20    | 1060                                      | 0.080                       |
| 16       | 680      | 10×16   | 1220                                      | 0.060                       |
| 16       | 820      | 10×20   | 1300                                      | 0.052                       |
| 16       | 1000     | 10×20   | 1410                                      | 0.046                       |
| 16       | 1000     | 13×16   | 1460                                      | 0.050                       |
| 16       | 1200     | 10×25   | 1660                                      | 0.044                       |
| 16       | 1500     | 10×25   | 1770                                      | 0.036                       |
| 16       | 1500     | 10×30   | 1920                                      | 0.031                       |
| 16       | 1500     | 13×20   | 1910                                      | 0.037                       |
| 16       | 1500     | 16×16   | 1950                                      | 0.042                       |
| 16       | 1800     | 10×25   | 1800                                      | 0.036                       |
| 16       | 1800     | 13×25   | 2080                                      | 0.030                       |
| 16       | 2200     | 13×25   | 2240                                      | 0.026                       |
| 16       | 2200     | 18×16   | 2220                                      | 0.043                       |
| 16       | 2700     | 13×30   | 2660                                      | 0.023                       |
| 16       | 2700     | 16×21   | 2540                                      | 0.027                       |
| 16       | 3300     | 13×35   | 2890                                      | 0.022                       |
| 16       | 3900     | 13×40   | 3360                                      | 0.017                       |
| 16       | 3900     | 16×25   | 2940                                      | 0.021                       |
| 16       | 3900     | 18×21   | 2870                                      | 0.026                       |
| 16       | 4700     | 16×31.5 | 3460                                      | 0.017                       |
| 16       | 4700     | 18×25   | 3150                                      | 0.020                       |
| 16       | 5600     | 16×35.5 | 3620                                      | 0.015                       |
| 16       | 5600     | 18×31.5 | 4180                                      | 0.015                       |
| 16       | 6800     | 16×41   | 4090                                      | 0.013                       |
| 16       | 8200     | 18×35.5 | 4230                                      | 0.014                       |
| 16       | 10000    | 18×41   | 4290                                      | 0.012                       |
| 25       | 47       | 5×11    | 220                                       | 0.560                       |
| 25       | 56       | 5×11    | 260                                       | 0.560                       |
| 25       | 100      | 6.3×11  | 350                                       | 0.250                       |
| 25       | 220      | 8×11.5  | 650                                       | 0.150                       |
| 25       | 330      | 8×16    | 850                                       | 0.092                       |
| 25       | 330      | 10×12.5 | 870                                       | 0.082                       |
| 25       | 470      | 8×20    | 1060                                      | 0.074                       |
| 25       | 470      | 10×12.5 | 1100                                      | 0.074                       |
| 25       | 470      | 10×16   | 1220                                      | 0.068                       |
| 25       | 680      | 10×20   | 1410                                      | 0.050                       |
| 25       | 680      | 13×16   | 1460                                      | 0.049                       |
| 25       | 820      | 10×25   | 1660                                      | 0.041                       |
| 25       | 1000     | 10×30   | 1920                                      | 0.032                       |
| 25       | 1000     | 13×20   | 1910                                      | 0.036                       |
| 25       | 1000     | 16×16   | 1950                                      | 0.042                       |
| 25       | 1200     | 18×16   | 2220                                      | 0.043                       |
| 25       | 1500     | 13×25   | 2240                                      | 0.028                       |
| 25       | 1800     | 13×30   | 2660                                      | 0.024                       |
| 25       | 1800     | 16×21   | 2540                                      | 0.027                       |
| 25       | 2200     | 13×30   | 2695                                      | 0.025                       |
| 25       | 2200     | 13×35   | 2890                                      | 0.023                       |
| 25       | 2200     | 18×21   | 2870                                      | 0.026                       |
| 25       | 2700     | 13×40   | 3360                                      | 0.017                       |
| 25       | 2700     | 16×25   | 2940                                      | 0.022                       |
| 25       | 3300     | 16×31.5 | 3460                                      | 0.017                       |
| 25       | 3300     | 18×25   | 3150                                      | 0.019                       |

## Case Size

| WV (Vdc) | Cap (uF) | Size mm | Rated Ripple current (Arms/105°C /100KHz) | Max ESR( Ω) at 20°C /100kHz |
|----------|----------|---------|-------------------------------------------|-----------------------------|
| 25       | 3900     | 16×35.5 | 3620                                      | 0.015                       |
| 25       | 3900     | 18×31.5 | 4180                                      | 0.015                       |
| 25       | 4700     | 16×41   | 4090                                      | 0.013                       |
| 25       | 4700     | 18×35.5 | 4230                                      | 0.014                       |
| 25       | 5600     | 18×41   | 4290                                      | 0.012                       |
| 35       | 33       | 5×11    | 230                                       | 0.550                       |
| 35       | 47       | 5×11    | 300                                       | 0.450                       |
| 35       | 56       | 6.3×11  | 360                                       | 0.210                       |
| 35       | 100      | 6.3×11  | 480                                       | 0.180                       |
| 35       | 150      | 8×11.5  | 680                                       | 0.140                       |
| 35       | 220      | 8×11.5  | 870                                       | 0.095                       |
| 35       | 220      | 8×16    | 1000                                      | 0.090                       |
| 35       | 220      | 10×12.5 | 1060                                      | 0.080                       |
| 35       | 270      | 8×20    | 1180                                      | 0.070                       |
| 35       | 330      | 10×16   | 1380                                      | 0.062                       |
| 35       | 470      | 10×20   | 1800                                      | 0.048                       |
| 35       | 470      | 13×16   | 1560                                      | 0.049                       |
| 35       | 560      | 10×25   | 1900                                      | 0.042                       |
| 35       | 680      | 10×30   | 2000                                      | 0.035                       |
| 35       | 680      | 13×20   | 2100                                      | 0.034                       |
| 35       | 680      | 16×16   | 2050                                      | 0.042                       |
| 35       | 1000     | 13×20   | 2180                                      | 0.038                       |
| 35       | 1000     | 13×25   | 2400                                      | 0.028                       |
| 35       | 1000     | 18×16   | 2220                                      | 0.043                       |
| 35       | 1200     | 13×30   | 2800                                      | 0.024                       |
| 35       | 1200     | 16×21   | 2800                                      | 0.028                       |
| 35       | 1500     | 13×35   | 3000                                      | 0.022                       |
| 35       | 1800     | 13×40   | 3360                                      | 0.017                       |
| 35       | 1800     | 16×25   | 2940                                      | 0.020                       |
| 35       | 1800     | 18×21   | 2870                                      | 0.026                       |
| 35       | 2200     | 16×31.5 | 3460                                      | 0.017                       |
| 35       | 2200     | 18×21   | 2930                                      | 0.025                       |
| 35       | 2200     | 18×25   | 3150                                      | 0.019                       |
| 35       | 2700     | 16×35.5 | 3620                                      | 0.018                       |
| 35       | 2700     | 18×31.5 | 4180                                      | 0.016                       |
| 35       | 3300     | 16×41   | 4090                                      | 0.013                       |
| 35       | 3300     | 18×35.5 | 4230                                      | 0.014                       |
| 35       | 3900     | 18×41   | 4300                                      | 0.012                       |
| 50       | 22       | 5×11    | 220                                       | 0.650                       |
| 50       | 47       | 6.3×11  | 270                                       | 0.370                       |
| 50       | 56       | 6.3×11  | 300                                       | 0.290                       |
| 50       | 100      | 8×11.5  | 680                                       | 0.160                       |
| 50       | 120      | 8×16    | 760                                       | 0.120                       |
| 50       | 150      | 10×12.5 | 800                                       | 0.120                       |
| 50       | 180      | 8×20    | 1000                                      | 0.090                       |
| 50       | 220      | 10×16   | 1300                                      | 0.082                       |
| 50       | 270      | 10×20   | 1350                                      | 0.060                       |
| 50       | 270      | 13×16   | 1270                                      | 0.061                       |
| 50       | 330      | 10×25   | 1600                                      | 0.057                       |
| 50       | 470      | 10×30   | 1800                                      | 0.048                       |
| 50       | 470      | 13×20   | 1740                                      | 0.045                       |
| 50       | 470      | 16×16   | 1710                                      | 0.055                       |
| 50       | 560      | 13×25   | 1960                                      | 0.042                       |
| 50       | 560      | 18×16   | 1940                                      | 0.054                       |
| 50       | 680      | 13×30   | 2320                                      | 0.030                       |
| 50       | 820      | 13×35   | 2520                                      | 0.025                       |
| 50       | 820      | 16×21   | 2220                                      | 0.034                       |
| 50       | 1000     | 13×35   | 2650                                      | 0.024                       |
| 50       | 1000     | 13×40   | 2930                                      | 0.021                       |
| 50       | 1000     | 16×25   | 2565                                      | 0.025                       |

| WV (Vdc) | Cap (uF) | Size mm | Rated Ripple current (Arms/105°C /100KHz) | Max ESR( Ω) at 20°C /100kHz |
|----------|----------|---------|-------------------------------------------|-----------------------------|
| 50       | 1000     | 18×21   | 2500                                      | 0.036                       |
| 50       | 1200     | 16×31.5 | 3020                                      | 0.030                       |
| 50       | 1200     | 18×25   | 2750                                      | 0.026                       |
| 50       | 1500     | 16×35.5 | 3160                                      | 0.019                       |
| 50       | 1800     | 16×41   | 3720                                      | 0.016                       |
| 50       | 1800     | 18×31.5 | 3645                                      | 0.021                       |
| 50       | 2200     | 18×35.5 | 3690                                      | 0.017                       |
| 50       | 2700     | 18×41   | 3810                                      | 0.014                       |
| 50       | 3300     | 18×41   | 3810                                      | 0.014                       |
| 63       | 15       | 5×11    | 65                                        | 1.800                       |
| 63       | 33       | 6.3×11  | 260                                       | 1.200                       |
| 63       | 47       | 8×11.5  | 360                                       | 0.660                       |
| 63       | 56       | 8×11.5  | 380                                       | 0.600                       |
| 63       | 82       | 8×16    | 460                                       | 0.440                       |
| 63       | 82       | 10×12.5 | 500                                       | 0.430                       |
| 63       | 100      | 10×12.5 | 640                                       | 0.340                       |
| 63       | 120      | 8×20    | 700                                       | 0.320                       |
| 63       | 120      | 10×16   | 760                                       | 0.300                       |
| 63       | 180      | 10×20   | 880                                       | 0.190                       |
| 63       | 180      | 13×16   | 800                                       | 0.180                       |
| 63       | 220      | 10×20   | 995                                       | 0.188                       |
| 63       | 220      | 10×25   | 1100                                      | 0.185                       |
| 63       | 270      | 10×30   | 1200                                      | 0.120                       |
| 63       | 270      | 13×20   | 1200                                      | 0.160                       |
| 63       | 270      | 16×16   | 1200                                      | 0.110                       |
| 63       | 330      | 13×25   | 1600                                      | 0.120                       |
| 63       | 390      | 18×16   | 1610                                      | 0.096                       |
| 63       | 470      | 13×30   | 1800                                      | 0.100                       |
| 63       | 470      | 16×21   | 1500                                      | 0.077                       |
| 63       | 560      | 13×35   | 2000                                      | 0.070                       |
| 63       | 560      | 16×25   | 2000                                      | 0.073                       |
| 63       | 680      | 13×40   | 2200                                      | 0.070                       |
| 63       | 680      | 18×21   | 1600                                      | 0.072                       |
| 63       | 820      | 16×31.5 | 2400                                      | 0.054                       |
| 63       | 820      | 18×25   | 1800                                      | 0.052                       |
| 63       | 1000     | 16×35.5 | 2500                                      | 0.048                       |
| 63       | 1000     | 18×25   | 2290                                      | 0.052                       |
| 63       | 1000     | 18×31.5 | 2800                                      | 0.047                       |
| 63       | 1200     | 16×41   | 2920                                      | 0.040                       |
| 63       | 1200     | 18×31.5 | 2850                                      | 0.045                       |
| 63       | 1200     | 18×35.5 | 3000                                      | 0.039                       |
| 63       | 1500     | 18×41   | 3200                                      | 0.036                       |
| 100      | 6.8      | 5×11    | 65                                        | 1.800                       |
| 100      | 15       | 6.3×11  | 130                                       | 1.000                       |
| 100      | 27       | 8×11.5  | 300                                       | 0.610                       |
| 100      | 39       | 8×16    | 340                                       | 0.360                       |
| 100      | 47       | 10×12.5 | 400                                       | 0.420                       |
| 100      | 56       | 8×20    | 410                                       | 0.260                       |
| 100      | 68       | 10×16   | 460                                       | 0.300                       |
| 100      | 82       | 10×20   | 600                                       | 0.210                       |
| 100      | 82       | 13×16   | 540                                       | 0.180                       |
| 100      | 100      | 10×25   | 800                                       | 0.200                       |
| 100      | 120      | 10×30   | 830                                       | 0.120                       |
| 100      | 120      | 13×20   | 900                                       | 0.160                       |
| 100      | 150      | 13×20   | 1000                                      | 0.110                       |
| 100      | 150      | 16×16   | 1000                                      | 0.110                       |
| 100      | 180      | 13×25   | 1010                                      | 0.096                       |
| 100      | 180      | 18×16   | 1180                                      | 0.096                       |
| 100      | 220      | 13×30   | 1210                                      | 0.080                       |
| 100      | 220      | 16×21   | 1140                                      | 0.077                       |

## Case Size

| WV<br>(Vdc) | Cap<br>(uF) | Size<br>mm | Rated Ripple<br>current<br>(Arms/105°C<br>/100KHz) | Max ESR( Ω)<br>at 20°C<br>/100kHz |
|-------------|-------------|------------|----------------------------------------------------|-----------------------------------|
| 100         | 270         | 13×35      | 1450                                               | 0.070                             |
| 100         | 270         | 16×25      | 1480                                               | 0.073                             |
| 100         | 330         | 13×40      | 1600                                               | 0.071                             |
| 100         | 330         | 18×21      | 1400                                               | 0.072                             |
| 100         | 390         | 16×31.5    | 1700                                               | 0.055                             |
| 100         | 390         | 18×25      | 1740                                               | 0.054                             |
| 100         | 470         | 16×35.5    | 1910                                               | 0.047                             |
| 100         | 470         | 18×31.5    | 1730                                               | 0.047                             |
| 100         | 560         | 16×41      | 2140                                               | 0.036                             |
| 100         | 680         | 18×35.5    | 2000                                               | 0.042                             |
| 100         | 820         | 18×41      | 2480                                               | 0.040                             |
| 100         | 1000        | 18×41      | 2580                                               | 0.038                             |