

**MXG SERIES**

**105°C Standard**

•Load Life : 105°C 3000 hours.(50~100Vdc:2000 hours)

RoHS  
compliance



**◆SPECIFICATIONS**

| Items                                             | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |         |      |      |            |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|------|------|------------|--------|---------|------|--|------------------------|-----------------------------------|---------|---------|-----|----------------|----|--------|---------|-----|--------------------|--------------------------------------------|------|------|------|------|------|------|------|------|-----------------|------------------------------------|--|--|--|--|--|--|--|--|
| Category Temperature Range                        | -40~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |         |      |      | -25~+105℃  |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Rated Voltage Range                               | 10~250Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |         |      |      | 315~500Vdc |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Capacitance Tolerance                             | ±20%(20℃,120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |         |      |      |            |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Leakage Current(MAX)                              | I=3√CV (After 5 minutes application of rated voltage)<br>I=Leakage Current(μA)                      C=Capacitance(μF)                      V=Rated Voltage(Vdc)                                                                                                                                                                                                                                                                                                  |         |         |      |      |            |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Dissipation Factor(MAX)<br>(tanδ)                 | <table><tr><td>Rated Voltage<br/>(Vdc)</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80~100</td><td>160~450</td><td>500</td></tr><tr><td>tanδ</td><td>0.55</td><td>0.50</td><td>0.45</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.25</td></tr></table> (20℃,120Hz)                                                                                                                                     |         |         |      |      |            |        |         |      |  | Rated Voltage<br>(Vdc) | 10                                | 16      | 25      | 35  | 50             | 63 | 80~100 | 160~450 | 500 | tanδ               | 0.55                                       | 0.50 | 0.45 | 0.40 | 0.35 | 0.30 | 0.25 | 0.20 | 0.25 |                 |                                    |  |  |  |  |  |  |  |  |
| Rated Voltage<br>(Vdc)                            | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 16      | 25      | 35   | 50   | 63         | 80~100 | 160~450 | 500  |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| tanδ                                              | 0.55                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.50    | 0.45    | 0.40 | 0.35 | 0.30       | 0.25   | 0.20    | 0.25 |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Endurance                                         | After applying rated voltage with rated ripple current for 3000 hours (50~100Vdc:2000 hours) at 105℃, the capacitors shall meet the following requirements. <table><tr><td>Capacitance Change</td><td colspan="9">Within ±20% of the initial value.</td></tr><tr><td>Dissipation Factor</td><td colspan="9">Not more than 200% of the specified value.</td></tr><tr><td>Leakage Current</td><td colspan="9">Not more than the specified value.</td></tr></table> |         |         |      |      |            |        |         |      |  | Capacitance Change     | Within ±20% of the initial value. |         |         |     |                |    |        |         |     | Dissipation Factor | Not more than 200% of the specified value. |      |      |      |      |      |      |      |      | Leakage Current | Not more than the specified value. |  |  |  |  |  |  |  |  |
| Capacitance Change                                | Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                |         |         |      |      |            |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Dissipation Factor                                | Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                       |         |         |      |      |            |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Leakage Current                                   | Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                               |         |         |      |      |            |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Low Temperature Stability<br>Impedance Ratio(MAX) | <table><tr><td>Rated Voltage<br/>(Vdc)</td><td>10~100</td><td>160~250</td><td>315~450</td><td>500</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>3</td><td>4</td><td>8</td><td>12</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>12</td><td>15</td><td>—</td><td>—</td></tr></table> (120Hz)                                                                                                                                                                                   |         |         |      |      |            |        |         |      |  | Rated Voltage<br>(Vdc) | 10~100                            | 160~250 | 315~450 | 500 | Z(-25℃)/Z(20℃) | 3  | 4      | 8       | 12  | Z(-40℃)/Z(20℃)     | 12                                         | 15   | —    | —    |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Rated Voltage<br>(Vdc)                            | 10~100                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 160~250 | 315~450 | 500  |      |            |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Z(-25℃)/Z(20℃)                                    | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4       | 8       | 12   |      |            |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |
| Z(-40℃)/Z(20℃)                                    | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 15      | —       | —    |      |            |        |         |      |  |                        |                                   |         |         |     |                |    |        |         |     |                    |                                            |      |      |      |      |      |      |      |      |                 |                                    |  |  |  |  |  |  |  |  |

**◆MULTIPLIER FOR RIPPLE CURRENT**

| Frequency (Hz) |            | 60(50) | 120(100) | 300  | 500  | 1k   | 10k≤ |
|----------------|------------|--------|----------|------|------|------|------|
| Coefficient    | 10~100Vdc  | 0.90   | 1.00     | 1.03 | 1.05 | 1.10 | 1.15 |
|                | 160~250Vdc | 0.80   | 1.00     | 1.15 | 1.20 | 1.30 | 1.50 |
|                | 315~500Vdc | 0.80   | 1.00     | 1.15 | 1.20 | 1.25 | 1.40 |

**◆OPTION**

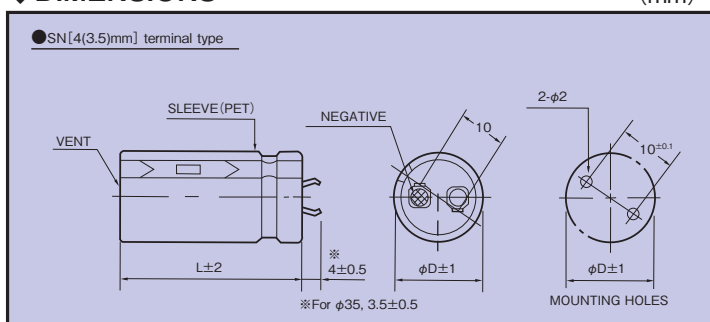
|                          | Code |
|--------------------------|------|
| PET Sleeve without plate | EFC  |

**◆PART NUMBER**

□□□ Rated Voltage    MXG Series    □□□□□ Capacitance    M Capacitance Tolerance    □□□ Option    SN Terminal Code    D×L Case Size

**◆DIMENSIONS**

(mm)



**◆ STANDARD SIZE**

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | 10         |            |            |            |            | 16         |            |            |            |            |
|-------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                   |                 | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  |
| 6800              |                 | 20x25:1.31 |            |            |            |            | 20x25:1.80 |            |            |            |            |
| 8200              |                 | 20x30:1.59 |            |            |            |            | 20x30:2.08 | 22x25:2.08 |            |            |            |
| 10000             |                 | 20x30:1.88 | 22x25:1.77 |            |            |            | 20x35:2.15 | 22x30:2.15 |            |            |            |
| 12000             |                 | 20x35:2.18 | 22x30:2.10 | 25x25:1.94 |            |            | 20x40:2.31 | 22x30:2.31 | 25x25:2.31 |            |            |
| 15000             |                 | 20x40:2.27 | 22x35:2.23 | 25x30:2.10 |            |            |            | 22x35:2.68 | 25x30:2.68 |            |            |
| 18000             |                 |            | 22x40:2.41 | 25x30:2.34 | 30x25:2.25 |            |            | 22x40:3.20 | 25x30:3.20 | 30x25:3.20 |            |
| 22000             |                 |            | 22x45:2.58 | 25x35:2.54 | 30x30:2.50 |            |            | 22x45:3.36 | 25x35:3.36 | 30x30:3.36 |            |
| 27000             |                 |            | 22x50:3.17 | 25x40:3.07 | 30x30:2.95 |            |            | 22x50:3.85 | 25x40:3.85 | 30x30:3.85 |            |
| 33000             |                 |            |            | 25x45:3.39 | 30x35:3.33 | 35x30:3.21 |            |            | 25x45:4.30 | 30x35:4.30 | 35x30:4.30 |
| 39000             |                 |            |            |            | 30x40:3.70 | 35x35:3.68 |            |            | 25x50:4.81 | 30x40:4.81 | 35x35:4.81 |
| 47000             |                 |            |            |            | 30x45:4.22 | 35x40:4.16 |            |            |            | 30x45:5.53 | 35x40:5.53 |
| 56000             |                 |            |            |            |            | 35x45:5.00 |            |            |            | 30x50:6.00 | 35x45:6.00 |
| 68000             |                 |            |            |            |            |            |            |            |            |            | 35x50:6.40 |

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | 25         |            |            |            |            | 35         |            |            |            |            |
|-------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                   |                 | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  |
| 2700              |                 |            |            |            |            |            | 20x25:1.29 |            |            |            |            |
| 3300              |                 |            |            |            |            |            | 20x30:1.57 |            |            |            |            |
| 3900              |                 |            |            |            |            |            | 20x30:1.78 | 22x25:1.78 |            |            |            |
| 4700              |                 | 20x25:1.65 |            |            |            |            | 20x35:2.02 | 22x30:2.02 |            |            |            |
| 5600              |                 | 20x30:1.85 | 22x25:1.85 |            |            |            | 20x40:2.13 | 22x35:2.13 | 25x25:2.13 |            |            |
| 6800              |                 | 20x35:2.11 | 22x30:2.11 |            |            |            |            | 22x40:2.41 | 25x30:2.41 |            |            |
| 8200              |                 | 20x40:2.34 | 22x30:2.34 | 25x25:2.34 |            |            |            | 22x45:2.85 | 25x35:2.85 | 30x25:2.85 |            |
| 10000             |                 |            | 22x35:2.65 | 25x30:2.65 |            |            |            | 22x50:3.05 | 25x40:3.05 | 30x30:3.05 |            |
| 12000             |                 |            | 22x40:2.81 | 25x30:2.81 | 30x25:2.81 |            |            |            | 25x45:3.37 | 30x35:3.37 | 35x30:3.37 |
| 15000             |                 |            | 22x45:3.13 | 25x35:3.13 | 30x30:3.13 |            |            |            | 25x50:3.72 | 30x40:3.72 | 35x35:3.72 |
| 18000             |                 |            |            | 25x40:3.56 | 30x30:3.56 |            |            |            |            | 30x45:4.37 | 35x35:4.37 |
| 22000             |                 |            |            | 25x50:4.04 | 30x35:4.04 | 35x30:4.04 |            |            |            | 30x50:4.92 | 35x40:4.92 |
| 27000             |                 |            |            |            | 30x40:4.74 | 35x35:4.74 |            |            |            |            | 35x50:5.30 |
| 33000             |                 |            |            |            | 30x50:5.50 | 35x40:5.50 |            |            |            |            |            |
| 39000             |                 |            |            |            |            | 35x45:5.80 |            |            |            |            |            |
| 47000             |                 |            |            |            |            | 35x50:6.30 |            |            |            |            |            |

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | 50         |            |            |            |            | 63         |            |            |            |            |
|-------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                   |                 | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  |
| 1500              |                 |            |            |            |            |            | 20x25:1.47 |            |            |            |            |
| 1800              |                 |            |            |            |            |            | 20x30:1.58 |            |            |            |            |
| 2200              |                 | 20x25:1.60 |            |            |            |            | 20x35:1.82 |            |            |            |            |
| 2700              |                 | 20x30:1.73 | 22x25:1.73 |            |            |            |            | 22x30:2.11 | 25x25:2.11 |            |            |
| 3300              |                 | 20x35:1.97 | 22x30:1.97 |            |            |            |            | 22x35:2.33 | 25x30:2.33 |            |            |
| 3900              |                 | 20x40:2.22 | 22x35:2.22 | 25x25:2.22 |            |            |            | 22x40:2.55 | 25x30:2.55 | 30x25:2.55 |            |
| 4700              |                 | 20x45:2.43 | 22x40:2.43 | 25x30:2.43 |            |            |            | 22x45:2.97 | 25x35:2.97 | 30x30:2.97 |            |
| 5600              |                 |            | 22x45:2.75 | 25x35:2.75 | 30x25:2.75 |            |            |            | 25x40:3.22 | 30x30:3.22 | 35x25:3.22 |
| 6800              |                 |            | 22x50:3.30 | 25x40:3.30 | 30x30:3.30 | 35x25:3.30 |            |            | 25x45:3.65 | 30x35:3.65 | 35x30:3.65 |
| 8200              |                 |            |            | 25x45:3.60 | 30x35:3.60 | 35x30:3.60 |            |            |            | 30x40:4.04 | 35x35:4.04 |
| 10000             |                 |            |            | 25x50:4.05 | 30x40:4.05 | 35x30:4.05 |            |            |            | 30x45:4.48 | 35x40:4.48 |
| 12000             |                 |            |            |            | 30x45:4.56 | 35x35:4.56 |            |            |            |            | 35x45:4.75 |
| 15000             |                 |            |            |            | 30x50:4.77 | 35x40:4.77 |            |            |            |            | 35x50:5.25 |

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | 80         |            |            |            |            | 100        |            |            |            |            |
|-------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                   |                 | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  |
| 680               |                 |            |            |            |            |            | 20x25:1.15 |            |            |            |            |
| 820               |                 |            |            |            |            |            | 20x30:1.32 | 22x25:1.32 |            |            |            |
| 1000              |                 | 20x25:1.24 |            |            |            |            | 20x30:1.47 | 22x30:1.47 |            |            |            |
| 1200              |                 | 20x30:1.44 | 22x25:1.44 |            |            |            | 20x35:1.69 | 22x30:1.69 | 25x25:1.69 |            |            |
| 1500              |                 | 20x30:1.59 | 22x30:1.59 |            |            |            |            | 22x35:1.98 | 25x30:1.98 |            |            |
| 1800              |                 | 20x35:1.79 | 22x30:1.79 | 25x25:1.79 |            |            |            | 22x40:2.23 | 25x35:2.23 | 30x25:2.23 |            |
| 2200              |                 | 20x40:2.03 | 22x35:2.03 | 25x30:2.03 |            |            |            |            | 25x40:2.55 | 30x30:2.55 | 35x25:2.55 |
| 2700              |                 |            | 22x40:2.39 | 25x35:2.39 | 30x25:2.39 |            |            |            | 25x45:2.89 | 30x35:2.89 | 35x30:2.89 |
| 3300              |                 |            | 22x50:2.64 | 25x40:2.64 | 30x30:2.64 | 35x25:2.64 |            |            | 25x50:3.30 | 30x40:3.30 | 35x35:3.30 |
| 3900              |                 |            |            | 25x45:2.97 | 30x30:2.97 | 35x30:2.97 |            |            |            | 30x45:3.67 | 35x35:3.67 |
| 4700              |                 |            |            | 25x50:3.38 | 30x35:3.38 | 35x30:3.38 |            |            |            | 30x50:3.80 | 35x40:3.80 |
| 5600              |                 |            |            |            | 30x40:3.80 | 35x35:3.80 |            |            |            |            | 35x45:4.05 |
| 6800              |                 |            |            |            | 30x50:4.10 | 35x40:4.10 |            |            |            |            |            |
| 8200              |                 |            |            |            |            | 35x45:4.30 |            |            |            |            |            |

Ripple Current (A r.m.s./120Hz, 105°C)

 Case Size  $\phi$ D×L(mm)

**◆ STANDARD SIZE**

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | $\phi$ 20  | $\phi$ 22  | 160<br>$\phi$ 25 | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | 180<br>$\phi$ 25 | $\phi$ 30  | $\phi$ 35  |
|-------------------|-----------------|------------|------------|------------------|------------|------------|------------|------------|------------------|------------|------------|
| 330               |                 | 20x25:1.32 |            |                  |            |            | 20x25:1.32 |            |                  |            |            |
| 390               |                 | 20x25:1.39 |            |                  |            |            | 20x30:1.53 | 22x25:1.43 |                  |            |            |
| 470               |                 | 20x30:1.62 | 22x25:1.51 |                  |            |            | 20x35:1.75 | 22x30:1.67 |                  |            |            |
| 560               |                 | 20x35:1.85 | 22x30:1.75 |                  |            |            | 20x40:1.98 | 22x30:1.75 | 25x25:1.59       |            |            |
| 680               |                 | 20x40:2.09 | 22x30:1.83 | 25x25:1.70       |            |            | 20x45:2.22 | 22x35:2.01 | 25x30:1.86       |            |            |
| 820               |                 | 20x50:2.47 | 22x35:2.10 | 25x30:2.00       |            |            |            | 22x40:2.27 | 25x35:2.14       | 30x25:2.00 |            |
| 1000              |                 |            | 22x40:2.37 | 25x35:2.20       | 30x25:2.20 |            |            | 22x50:2.68 | 25x40:2.40       | 30x30:2.20 | 35x25:2.20 |
| 1200              |                 |            | 22x55:2.98 | 25x40:2.50       | 30x30:2.30 | 35x25:2.30 |            | 22x60:3.09 | 25x45:2.67       | 30x35:2.30 | 35x30:2.30 |
| 1500              |                 |            |            | 25x45:2.80       | 30x35:2.50 | 35x30:2.50 |            |            | 25x50:2.99       | 30x40:2.54 | 35x30:2.50 |
| 1800              |                 |            |            | 25x60:3.43       | 30x40:2.70 | 35x35:2.70 |            |            |                  | 30x45:2.79 | 35x35:2.70 |
| 2200              |                 |            |            |                  | 30x45:2.90 | 35x40:2.90 |            |            |                  | 30x50:3.12 | 35x40:2.90 |
| 2700              |                 |            |            |                  | 30x60:3.58 | 35x45:3.10 |            |            |                  |            | 35x50:3.10 |
| 3300              |                 |            |            |                  |            | 35x55:3.24 |            |            |                  |            | 35x60:3.44 |

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | $\phi$ 20  | $\phi$ 22  | 200<br>$\phi$ 25 | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | 220<br>$\phi$ 25 | $\phi$ 30  | $\phi$ 35  |
|-------------------|-----------------|------------|------------|------------------|------------|------------|------------|------------|------------------|------------|------------|
| 220               |                 |            |            |                  |            |            | 20x25:1.17 |            |                  |            |            |
| 270               |                 | 20x25:1.25 |            |                  |            |            | 20x30:1.36 | 22x25:1.29 |                  |            |            |
| 330               |                 | 20x30:1.46 | 22x25:1.37 |                  |            |            | 20x30:1.46 | 22x25:1.37 |                  |            |            |
| 390               |                 | 20x30:1.54 | 22x25:1.44 |                  |            |            | 20x35:1.66 | 22x30:1.58 | 25x25:1.46       |            |            |
| 470               |                 | 20x35:1.76 | 22x30:1.67 | 25x25:1.53       |            |            | 20x40:1.87 | 22x35:1.81 | 25x25:1.53       |            |            |
| 560               |                 | 20x40:1.98 | 22x35:1.90 | 25x25:1.60       |            |            | 20x45:2.09 | 22x40:2.04 | 25x30:1.79       | 30x25:1.61 |            |
| 680               |                 | 20x50:2.34 | 22x40:2.15 | 25x30:1.85       | 30x25:1.75 |            |            | 22x45:2.29 | 25x35:2.05       | 30x25:1.78 |            |
| 820               |                 |            | 22x45:2.41 | 25x35:2.12       | 30x25:2.04 |            |            | 22x50:2.54 | 25x40:2.31       | 30x30:1.93 | 35x25:1.93 |
| 1000              |                 |            | 22x55:2.84 | 25x45:2.58       | 30x30:2.30 |            |            |            | 25x50:2.72       | 30x35:2.33 | 35x30:2.33 |
| 1200              |                 |            |            | 25x50:2.84       | 30x35:2.65 | 35x30:2.65 |            |            | 25x55:2.96       | 30x40:2.50 | 35x35:2.50 |
| 1500              |                 |            |            | 25x60:3.28       | 30x45:2.80 | 35x35:2.80 |            |            |                  | 30x50:2.92 | 35x40:2.76 |
| 1800              |                 |            |            |                  | 30x50:3.08 | 35x40:3.08 |            |            |                  | 30x60:3.38 | 35x45:3.11 |
| 2200              |                 |            |            |                  | 30x60:3.45 | 35x45:3.48 |            |            |                  |            | 35x55:3.67 |
| 2700              |                 |            |            |                  |            | 35x55:4.05 |            |            |                  |            |            |

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | $\phi$ 20  | $\phi$ 22  | 250<br>$\phi$ 25 | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | 315<br>$\phi$ 25 | $\phi$ 30  | $\phi$ 35  |
|-------------------|-----------------|------------|------------|------------------|------------|------------|------------|------------|------------------|------------|------------|
| 120               |                 |            |            |                  |            |            | 20x25:0.86 |            |                  |            |            |
| 150               |                 |            |            |                  |            |            | 20x30:1.00 | 22x25:0.98 |                  |            |            |
| 180               |                 |            |            |                  |            |            | 20x35:1.14 | 22x30:1.13 |                  |            |            |
| 220               |                 | 20x25:1.17 |            |                  |            |            | 20x40:1.30 | 22x30:1.22 | 25x25:1.17       |            |            |
| 270               |                 | 20x30:1.36 | 22x25:1.30 |                  |            |            | 20x45:1.48 | 22x35:1.40 | 25x30:1.37       |            |            |
| 330               |                 | 20x35:1.57 | 22x30:1.51 | 25x25:1.41       |            |            | 20x50:1.67 | 22x40:1.59 | 25x35:1.56       | 30x25:1.38 |            |
| 390               |                 | 20x40:1.76 | 22x35:1.71 | 25x25:1.47       |            |            |            | 22x45:1.84 | 25x35:1.65       | 30x30:1.60 | 35x25:1.44 |
| 470               |                 | 20x45:1.98 | 22x40:1.94 | 25x30:1.71       | 30x25:1.57 |            |            | 22x55:2.05 | 25x45:1.96       | 30x35:1.83 | 35x30:1.71 |
| 560               |                 |            | 22x45:2.16 | 25x35:1.95       | 30x25:1.60 |            |            |            | 25x50:2.17       | 30x35:1.89 | 35x30:1.72 |
| 680               |                 |            | 22x50:2.40 | 25x40:2.20       | 30x30:1.87 | 35x25:1.70 |            |            | 25x55:2.41       | 30x40:2.12 | 35x35:1.98 |
| 820               |                 |            | 22x60:2.77 | 25x45:2.45       | 30x35:2.14 | 35x30:2.00 |            |            |                  | 30x50:2.51 | 35x40:2.22 |
| 1000              |                 |            |            | 25x55:2.87       | 30x40:2.40 | 35x35:2.20 |            |            |                  | 30x55:2.75 | 35x45:2.45 |
| 1200              |                 |            |            |                  | 30x45:2.65 | 35x35:2.30 |            |            |                  |            | 35x50:2.67 |
| 1500              |                 |            |            |                  | 30x55:3.12 | 35x45:2.67 |            |            |                  |            | 35x60:3.08 |
| 1800              |                 |            |            |                  |            | 35x50:2.89 |            |            |                  |            |            |
| 2200              |                 |            |            |                  |            | 35x60:3.32 |            |            |                  |            |            |

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | $\phi$ 20  | $\phi$ 22  | 350<br>$\phi$ 25 | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | 385<br>$\phi$ 25 | $\phi$ 30  | $\phi$ 35  |
|-------------------|-----------------|------------|------------|------------------|------------|------------|------------|------------|------------------|------------|------------|
| 100               |                 | 20x25:0.81 |            |                  |            |            | 20x25:0.81 |            |                  |            |            |
| 120               |                 | 20x30:0.93 | 22x25:0.91 |                  |            |            | 20x30:0.94 | 22x25:0.91 |                  |            |            |
| 150               |                 | 20x35:1.08 | 22x30:1.06 |                  |            |            | 20x35:1.08 | 22x30:1.07 |                  |            |            |
| 180               |                 | 20x40:1.22 | 22x30:1.14 | 25x25:1.10       |            |            | 20x40:1.22 | 22x35:1.21 | 25x25:1.11       |            |            |
| 220               |                 | 20x45:1.38 | 22x35:1.31 | 25x30:1.28       |            |            | 20x45:1.39 | 22x40:1.38 | 25x30:1.29       | 30x25:1.25 |            |
| 270               |                 | 20x50:1.56 | 22x45:1.55 | 25x35:1.47       | 30x25:1.31 |            |            | 22x45:1.56 | 25x35:1.47       | 30x30:1.46 |            |
| 330               |                 |            | 22x50:1.75 | 25x40:1.67       | 30x30:1.53 | 35x25:1.39 |            | 22x55:1.81 | 25x40:1.67       | 30x30:1.53 | 35x25:1.37 |
| 390               |                 |            | 22x55:1.93 | 25x45:1.86       | 30x35:1.74 | 35x30:1.63 |            | 22x60:2.00 | 25x50:1.94       | 30x35:1.73 | 35x30:1.62 |
| 470               |                 |            |            | 25x50:2.06       | 30x40:1.96 | 35x30:1.66 |            |            | 25x55:2.15       | 30x40:1.94 | 35x35:1.84 |
| 560               |                 |            |            | 25x55:2.27       | 30x45:2.17 | 35x35:1.90 |            |            |                  | 30x45:2.15 | 35x40:2.07 |
| 680               |                 |            |            |                  | 30x50:2.40 | 35x40:2.13 |            |            |                  | 30x55:2.51 | 35x45:2.29 |
| 820               |                 |            |            |                  | 30x55:2.62 | 35x45:2.36 |            |            |                  |            | 35x50:2.50 |
| 1000              |                 |            |            |                  |            | 35x55:2.77 |            |            |                  |            | 35x60:2.89 |
| 1200              |                 |            |            |                  |            | 35x60:2.97 |            |            |                  |            |            |

Ripple Current (A r.m.s./120Hz, 105°C)

 Case Size  $\phi$ D×L(mm)

**◆ STANDARD SIZE**

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | 400        |            |            |            |            | 420        |            |            |            |            |
|-------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                   |                 | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  |
| 68                |                 | 20x25:0.69 |            |            |            |            | 20x25:0.69 |            |            |            |            |
| 82                |                 | 20x25:0.75 | 22x25:0.78 |            |            |            | 20x25:0.75 | 22x25:0.78 |            |            |            |
| 100               |                 | 20x30:0.87 | 22x25:0.85 |            |            |            | 20x30:0.86 | 22x25:0.85 | 25x25:0.88 |            |            |
| 120               |                 | 20x35:0.99 | 22x30:0.97 | 25x25:0.96 |            |            | 20x35:0.98 | 22x30:0.97 | 25x25:0.95 |            |            |
| 150               |                 | 20x40:1.13 | 22x35:1.13 | 25x25:1.04 |            |            | 20x40:1.13 | 22x35:1.12 | 25x30:1.11 | 30x25:1.10 |            |
| 180               |                 | 20x40:1.23 | 22x35:1.22 | 25x30:1.20 | 30x25:1.18 |            | 20x45:1.27 | 22x40:1.27 | 25x30:1.19 | 30x25:1.16 |            |
| 220               |                 | 20x50:1.44 | 22x45:1.44 | 25x35:1.37 | 30x25:1.25 |            |            | 22x45:1.43 | 25x35:1.36 | 30x30:1.35 | 35x25:1.27 |
| 270               |                 |            | 22x50:1.62 | 25x40:1.56 | 30x30:1.45 | 35x25:1.34 |            | 22x50:1.62 | 25x40:1.55 | 30x30:1.43 | 35x25:1.30 |
| 330               |                 |            | 22x55:1.82 | 25x45:1.76 | 30x35:1.66 | 35x30:1.57 |            | 22x60:1.86 | 25x50:1.74 | 30x35:1.64 | 35x30:1.54 |
| 390               |                 |            |            | 25x50:1.94 | 30x40:1.86 | 35x30:1.60 |            |            | 25x55:2.00 | 30x40:1.83 | 35x35:1.75 |
| 470               |                 |            |            | 25x55:2.15 | 30x45:2.07 | 35x35:1.83 |            |            | 25x60:2.21 | 30x45:2.04 | 35x40:1.97 |
| 560               |                 |            |            |            | 30x50:2.28 | 35x40:2.05 |            |            |            | 30x55:2.35 | 35x45:2.18 |
| 680               |                 |            |            |            | 30x55:2.50 | 35x45:2.27 |            |            |            | 30x60:2.57 | 35x50:2.39 |
| 820               |                 |            |            |            |            | 35x55:2.65 |            |            |            |            | 35x55:2.59 |

| Cap<br>( $\mu$ F) | Vdc<br>$\phi$ D | 450        |            |            |            |            | 500        |            |            |            |            |
|-------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                   |                 | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  | $\phi$ 20  | $\phi$ 22  | $\phi$ 25  | $\phi$ 30  | $\phi$ 35  |
| 39                |                 |            |            |            |            |            | 20x25:0.51 |            |            |            |            |
| 47                |                 |            |            |            |            |            | 20x30:0.59 | 22x25:0.58 |            |            |            |
| 56                |                 | 20x25:0.63 |            |            |            |            | 20x35:0.67 | 22x30:0.66 |            |            |            |
| 68                |                 | 20x25:0.69 | 22x25:0.72 |            |            |            | 20x40:0.76 | 22x30:0.73 | 25x25:0.72 |            |            |
| 82                |                 | 20x30:0.80 | 22x25:0.78 |            |            |            | 20x45:0.85 | 22x35:0.83 | 25x30:0.83 | 30x25:0.83 |            |
| 100               |                 | 20x35:0.91 | 22x30:0.90 | 25x25:0.89 |            |            |            | 22x40:0.94 | 25x35:0.94 | 30x25:0.91 |            |
| 120               |                 | 20x35:0.99 | 22x30:0.98 | 25x25:0.95 |            |            |            | 22x50:1.08 | 25x35:1.02 | 30x30:1.04 | 35x25:1.01 |
| 150               |                 | 20x45:1.18 | 22x35:1.13 | 25x30:1.11 | 30x25:1.10 |            |            | 22x55:1.24 | 25x45:1.21 | 30x35:1.19 | 35x30:1.18 |
| 180               |                 |            | 22x40:1.27 | 25x35:1.27 | 30x25:1.16 |            |            | 22x60:1.38 | 25x50:1.36 | 30x40:1.34 | 35x30:1.25 |
| 220               |                 |            | 22x50:1.49 | 25x40:1.44 | 30x30:1.35 | 35x25:1.26 |            |            | 25x55:1.52 | 30x45:1.51 | 35x40:1.51 |
| 270               |                 |            | 22x55:1.68 | 25x45:1.62 | 30x35:1.55 | 35x30:1.48 |            |            |            | 30x50:1.69 | 35x40:1.62 |
| 330               |                 |            |            | 25x50:1.82 | 30x40:1.75 | 35x30:1.52 |            |            |            | 30x55:1.89 | 35x45:1.81 |
| 390               |                 |            |            | 25x60:2.07 | 30x45:1.93 | 35x35:1.74 |            |            |            |            | 35x55:2.08 |
| 470               |                 |            |            |            | 30x50:2.14 | 35x40:1.95 |            |            |            |            | 35x60:2.28 |
| 560               |                 |            |            |            | 30x55:2.34 | 35x45:2.16 |            |            |            |            |            |
| 680               |                 |            |            |            |            | 35x55:2.51 |            |            |            |            |            |
| 820               |                 |            |            |            |            | 35x60:2.71 |            |            |            |            |            |

↑ Ripple Current (A r.m.s./120Hz, 105°C)  
↑ Case Size  $\phi$ D×L(mm)