

## MH7 SERIES

105°C 7mm Height.

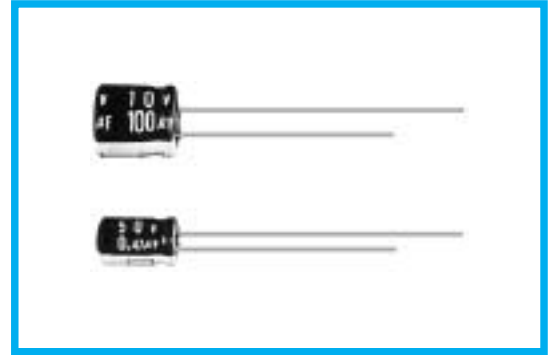
### ◆FEATURES

- RoHS compliance.

MH7

Long Life

ML



### ◆SPECIFICATIONS

| Items                                             | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                         |      |      |      |      |      |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|--|----------------------|-----------------------------------|----|----|----|----|----|--------------------|--------------------------------------------|------|------|------|------|------|-----------------|------------------------------------|---|---|---|---|---|
| Category Temperature Range                        | -40~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |      |      |      |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |
| Rated Voltage Range                               | 6.3~50V.DC                                                                                                                                                                                                                                                                                                                                                                                                                              |      |      |      |      |      |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |
| Capacitance Tolerance                             | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                       |      |      |      |      |      |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |
| Leakage Current(MAX)                              | I=0.01CV or 3 μ A whichever is greater. (After 2 minutes application of rated voltage)<br>I=Leakage Current( μ A)                      C=Rated Capacitance( μ F)                      V=Rated Voltage(V)                                                                                                                                                                                                                                |      |      |      |      |      |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |
| Dissipation Factor(MAX)<br>(tan δ )               | <table><tr><td>Rated Voltage<br/>(V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>tan δ</td><td>0.24</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                             |      |      |      |      |      |  | Rated Voltage<br>(V) | 6.3                               | 10 | 16 | 25 | 35 | 50 | tan δ              | 0.24                                       | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 |                 |                                    |   |   |   |   |   |
| Rated Voltage<br>(V)                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10   | 16   | 25   | 35   | 50   |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |
| tan δ                                             | 0.24                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |
| Endurance                                         | After applying rated voltage with rated ripple current for 1000 hrs at 105℃, the capacitors shall meet the following requirements. <table><tr><td>Capacitance Change</td><td colspan="6">Within ±25% of the initial value.</td></tr><tr><td>Dissipation Factor</td><td colspan="6">Not more than 200% of the specified value.</td></tr><tr><td>Leakage Current</td><td colspan="6">Not more than the specified value.</td></tr></table> |      |      |      |      |      |  | Capacitance Change   | Within ±25% 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 ±25% 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/>(V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>3</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>6</td><td>5</td><td>4</td><td>3</td><td>3</td><td>3</td></tr></table> (120Hz)                                                                                                               |      |      |      |      |      |  | Rated Voltage<br>(V) | 6.3                               | 10 | 16 | 25 | 35 | 50 | Z(-25℃)/Z(20℃)     | 3                                          | 2    | 2    | 2    | 2    | 2    | Z(-40℃)/Z(20℃)  | 6                                  | 5 | 4 | 3 | 3 | 3 |
| Rated Voltage<br>(V)                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10   | 16   | 25   | 35   | 50   |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |
| Z(-25℃)/Z(20℃)                                    | 3                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2    | 2    | 2    | 2    | 2    |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |
| Z(-40℃)/Z(20℃)                                    | 6                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5    | 4    | 3    | 3    | 3    |  |                      |                                   |    |    |    |    |    |                    |                                            |      |      |      |      |      |                 |                                    |   |   |   |   |   |

### ◆MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

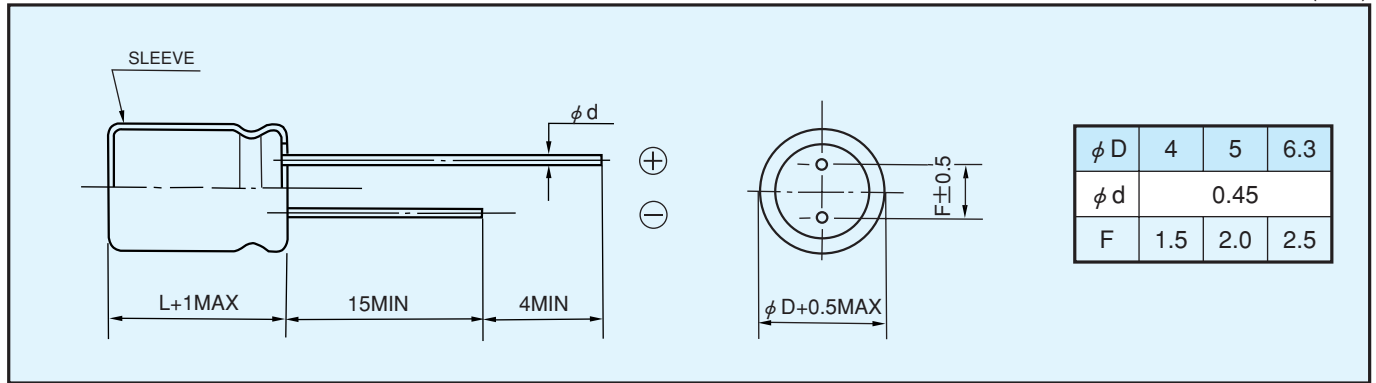
| Frequency (Hz) | 60(50) | 120 | 500  | 1k   | 10k≤ |
|----------------|--------|-----|------|------|------|
| Coefficient    |        |     |      |      |      |
| 0.1~1 μF       | 0.50   | 1.0 | 1.20 | 1.30 | 1.50 |
| 2.2~4.7 μF     | 0.65   | 1.0 | 1.20 | 1.30 | 1.50 |
| 10~47 μF       | 0.8    | 1.0 | 1.20 | 1.30 | 1.50 |
| 100 μF         | 0.8    | 1.0 | 1.10 | 1.15 | 1.20 |

### ◆PART NUMBER

   MH7                           D×L  
 Rated Voltage    Series    Rated Capacitance    Capacitance Tolerance    Option    Lead Forming    Case Size

◆寸法図 DIMENSIONS

(mm)



◆STANDARD SIZE, RATED RIPPLE CURRENT

Size  $\phi D \times L$ (mm), Ripple Current (mA r.m.s./105°C, 120Hz)

| Cap(μF) \ WV (V.DC) | 6.3 (0J) |        | 10 (1A) |        | 16 (1C) |        | 25 (1E) |        | 35 (1V) |        | 50 (1H) |        |
|---------------------|----------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|
|                     | Size     | Ripple | Size    | Ripple | Size    | Ripple | Size    | Ripple | Size    | Ripple | Size    | Ripple |
| 0.1                 |          |        |         |        |         |        |         |        |         |        | 4×7     | 1.0    |
| 0.22                |          |        |         |        |         |        |         |        |         |        | 4×7     | 2.3    |
| 0.33                |          |        |         |        |         |        |         |        |         |        | 4×7     | 3.5    |
| 0.47                |          |        |         |        |         |        |         |        |         |        | 4×7     | 5      |
| 1                   |          |        |         |        |         |        |         |        |         |        | 4×7     | 10     |
| 2.2                 |          |        |         |        |         |        |         |        |         |        | 4×7     | 19     |
| 3.3                 |          |        |         |        |         |        |         |        |         |        | 4×7     | 24     |
| 4.7                 |          |        |         |        |         |        |         |        | 4×7     | 24     | 5×7     | 29     |
| 10                  |          |        |         |        | 4×7     | 29     | 5×7     | 33     | 5×7     | 36     | 6.3×7   | 44     |
| 22                  | 4×7      | 34     | 5×7     | 38     | 5×7     | 44     | 6.3×7   | 51     | 6.3×7   | 60     | 6.3×7   | 60     |
| 33                  | 5×7      | 42     | 5×7     | 47     | 6.3×7   | 60     | 6.3×7   | 65     | 6.3×7   | 65     |         |        |
| 47                  | 5×7      | 50     | 6.3×7   | 65     | 6.3×7   | 70     | 6.3×7   | 70     |         |        |         |        |
| 100                 | 6.3×7    | 77     | 6.3×7   | 87     | 6.3×7   | 91     |         |        |         |        |         |        |