



**THE DATASHEET OF  
UHE1H221MPD1TD**

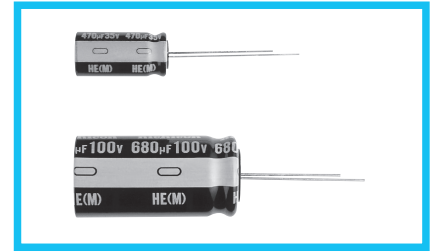


# ALUMINUM ELECTROLYTIC CAPACITORS

**UHE** Miniature Sized, Low Impedance,  
High Reliability



- Low impedance and high reliability withstanding 6000 hours to 10000 hours.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).



## Specifications

| Item  | Performance Characteristics  |   |            |      |           |             |      |      |      |               |   |
|---|--|---|------------|------|-----------|-------------|------|------|------|---------------|---|
| Category Temperature Range  | -40 to +105°C  |   |            |      |           |             |      |      |      |               |   |
| Rated Voltage Range   | 6.3 to 100V  |   |            |      |           |             |      |      |      |               |   |
| Rated Capacitance Range   | 27 to 18000μF  |   |            |      |           |             |      |      |      |               |   |
| Capacitance Tolerance   | ±20% at 120Hz, 20°C  |   |            |      |           |             |      |      |      |               |   |
| Leakage Current ※   | After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV (μA).   |   |            |      |           |             |      |      |      |               |   |
| Tangent of loss angle (tan δ)   | Rated voltage (V)  | 6.3   | 10         | 16   | 25        | 35          | 50   | 63   | 100  | 120Hz<br>20°C |   |
|   | tan δ (max.)   | 0.22  | 0.19       | 0.16 | 0.14      | 0.12        | 0.10 | 0.09 | 0.08 |               |   |
| For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. |  |   |            |      |           |             |      |      |      |               |   |
| Stability at Low Temperature  | Rated voltage (V)  | 6.3   | 10         | 16   | 25        | 35          | 50   | 63   | 100  | 120Hz         |   |
|   | Impedance ratio (max.)   | Z(-25°C) / Z(+20°C)                           | 4          | 3    | 2         | 2           | 2    | 2    | 2    |               | 2 |
|   |  | Z(-40°C) / Z(+20°C)                           | 8          | 6    | 4         | 3           | 3    | 3    | 3    | 3             |   |
| Endurance   | The following specifications shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied at 105°C, the peak voltage shall not exceed the rated voltage. |   |            |      |           |             |      |      |      |               |   |
|   | Case size  | φD = 8, 10                                    |            |      | φD ≥ 12.5 |             |      |      |      |               |   |
|   | Rated voltage  | 6.3 to 10V                                    | 6000 hours |      |           | 8000 hours  |      |      |      |               |   |
|   |  | 16 to 100V                                    | 7000 hours |      |           | 10000 hours |      |      |      |               |   |
|   | Capacitance change   | Within ±25% of the initial capacitance value  |            |      |           |             |      |      |      |               |   |
|   | tan δ  | 200% or less than the initial specified value |            |      |           |             |      |      |      |               |   |
| Leakage current   | Less than or equal to the initial specified value  |   |            |      |           |             |      |      |      |               |   |
| Marking   | Printed with white color letter on black sleeve.   |   |            |      |           |             |      |      |      |               |   |

※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

## Radial Lead Type



- Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

## Type numbering system (Example : 10V 1000μF)



※ Configuration

| φ D        | Pb-free leadwire<br>Pb-free PET sleeve |
|------------|--|
| 8 - 10     | PD                                     |
| 12.5 to 18 | HD                                     |

## Frequency coefficient of rated ripple current

| Cap. (μF)     | Frequency | 50Hz | 120Hz | 300Hz | 1kHz | 10kHz or more |
|---------------|-----------|------|-------|-------|------|---------------|
| 27            |           | 0.45 | 0.55  | 0.70  | 0.90 | 1.00          |
| 39 to 330     |           | 0.60 | 0.70  | 0.85  | 0.95 | 1.00          |
| 390 to 1000   |           | 0.65 | 0.75  | 0.90  | 0.98 | 1.00          |
| 1200 to 18000 |           | 0.75 | 0.80  | 0.95  | 1.00 | 1.00          |

● Dimension table in next page.

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### ■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) (at 20°C after 2 minutes) | Impedance (Ω) max. |              | Rated Ripple (mArms) (105°C/100kHz) | Part Number  |
|--------------------------|------------------------|---------------------|-------|--|--------------------|--------------|-------------------------------------|--------------|
|                          |                        |                     |       |  | 20°C/100kHz        | -10°C/100kHz |                                     |              |
| 6.3 (0J)                 | 680                    | 8×11.5              | 0.22  | 42.84  | 0.13               | 0.52         | 640                                 | UHE0J681MPD  |
|                          | 820                    | 10×12.5             | 0.22  | 51.66  | 0.080              | 0.32         | 865                                 | UHE0J821MPD  |
|                          | 1000                   | 8×15                | 0.22  | 63   | 0.087              | 0.35         | 840                                 | UHE0J102MPD  |
|                          | 1200                   | 8×20                | 0.22  | 75.6   | 0.069              | 0.27         | 1050                                | UHE0J122MPD  |
|                          | 1200                   | 10×16               | 0.22  | 75.6   | 0.060              | 0.24         | 1210                                | UHE0J122MPD6 |
|                          | 1500                   | 10×20               | 0.22  | 94.5   | 0.046              | 0.18         | 1400                                | UHE0J152MPD  |
|                          | 1800                   | 12.5×15             | 0.22  | 113.4  | 0.049              | 0.16         | 1450                                | UHE0J182MHD  |
|                          | 2200                   | 10×25               | 0.24  | 138.6  | 0.042              | 0.17         | 1650                                | UHE0J222MPD  |
|                          | 2700                   | 10×30.5             | 0.24  | 170.1  | 0.031              | 0.12         | 1910                                | UHE0J272MPD6 |
|                          | 2700                   | 16×15               | 0.24  | 170.1  | 0.042              | 0.12         | 1940                                | UHE0J272MHD  |
|                          | 3300                   | 12.5×20             | 0.26  | 207.9  | 0.035              | 0.12         | 1900                                | UHE0J332MHD  |
|                          | 3900                   | 12.5×25             | 0.26  | 245.7  | 0.027              | 0.089        | 2230                                | UHE0J392MHD  |
|                          | 3900                   | 18×15               | 0.26  | 245.7  | 0.043              | 0.11         | 2210                                | UHE0J392MHD6 |
|                          | 4700                   | 12.5×30.5           | 0.28  | 296.1  | 0.024              | 0.078        | 2650                                | UHE0J472MHD  |
|                          | 5600                   | 12.5×35.5           | 0.30  | 352.8  | 0.020              | 0.065        | 2880                                | UHE0J562MHD  |
|                          | 5600                   | 16×20               | 0.30  | 352.8  | 0.027              | 0.078        | 2530                                | UHE0J562MHD6 |
|                          | 6800                   | 12.5×40             | 0.32  | 428.4  | 0.017              | 0.056        | 3350                                | UHE0J682MHD  |
|                          | 6800                   | 16×25               | 0.32  | 428.4  | 0.021              | 0.060        | 2930                                | UHE0J682MHD6 |
|                          | 6800                   | 18×20               | 0.32  | 428.4  | 0.026              | 0.067        | 2860                                | UHE0J682MHD3 |
|                          | 8200                   | 16×30.5             | 0.36  | 516.6  | 0.017              | 0.050        | 3450                                | UHE0J822MHD  |
| 10000                    | 16×35.5                | 0.40                | 630   | 0.015  | 0.044              | 3610         | UHE0J103MHD                         |              |
| 10000                    | 18×25                  | 0.40                | 630   | 0.019  | 0.049              | 3140         | UHE0J103MHD6                        |              |
| 12000                    | 16×40                  | 0.44                | 756   | 0.013  | 0.038              | 4080         | UHE0J123MHD                         |              |
| 12000                    | 18×30.5                | 0.44                | 756   | 0.015  | 0.040              | 4170         | UHE0J123MHD6                        |              |
| 15000                    | 18×35.5                | 0.50                | 945   | 0.014  | 0.038              | 4220         | UHE0J153MHD                         |              |
| 18000                    | 18×40                  | 0.56                | 1134  | 0.012  | 0.032              | 4280         | UHE0J183MHD                         |              |
| 10 (1A)                  | 470                    | 8×11.5              | 0.19  | 47   | 0.13               | 0.52         | 640                                 | UHE1A471MPD  |
|                          | 680                    | 8×15                | 0.19  | 68   | 0.087              | 0.35         | 840                                 | UHE1A681MPD  |
|                          | 680                    | 10×12.5             | 0.19  | 68   | 0.080              | 0.32         | 865                                 | UHE1A681MPD6 |
|                          | 1000                   | 8×20                | 0.19  | 100  | 0.069              | 0.27         | 1050                                | UHE1A102MPD  |
|                          | 1000                   | 10×16               | 0.19  | 100  | 0.060              | 0.24         | 1210                                | UHE1A102MPD6 |
|                          | 1200                   | 10×20               | 0.19  | 120  | 0.046              | 0.18         | 1400                                | UHE1A122MPD  |
|                          | 1500                   | 10×25               | 0.19  | 150  | 0.042              | 0.17         | 1650                                | UHE1A152MPD  |
|                          | 1500                   | 12.5×15             | 0.19  | 150  | 0.049              | 0.16         | 1450                                | UHE1A152MHD6 |
|                          | 2200                   | 10×30.5             | 0.21  | 220  | 0.031              | 0.12         | 1910                                | UHE1A222MPD  |
|                          | 2200                   | 12.5×20             | 0.21  | 220  | 0.035              | 0.12         | 1900                                | UHE1A222MHD6 |
|                          | 2200                   | 16×15               | 0.21  | 220  | 0.042              | 0.12         | 1940                                | UHE1A222MHD3 |
|                          | 2700                   | 18×15               | 0.21  | 270  | 0.043              | 0.11         | 2210                                | UHE1A272MHD  |
|                          | 3300                   | 12.5×25             | 0.23  | 330  | 0.027              | 0.089        | 2230                                | UHE1A332MHD  |
|                          | 3900                   | 12.5×30.5           | 0.23  | 390  | 0.024              | 0.078        | 2650                                | UHE1A392MHD  |
|                          | 3900                   | 16×20               | 0.23  | 390  | 0.027              | 0.078        | 2530                                | UHE1A392MHD6 |
|                          | 4700                   | 12.5×35.5           | 0.25  | 470  | 0.020              | 0.065        | 2880                                | UHE1A472MHD  |
|                          | 5600                   | 12.5×40             | 0.27  | 560  | 0.017              | 0.056        | 3350                                | UHE1A562MHD  |
|                          | 5600                   | 16×25               | 0.27  | 560  | 0.021              | 0.060        | 2930                                | UHE1A562MHD6 |
|                          | 5600                   | 18×20               | 0.27  | 560  | 0.026              | 0.067        | 2860                                | UHE1A562MHD3 |

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).  
 If there is no size code in the part number, please add size code "1" and then add the appropriate code.

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## ■ Dimensions

| Rated Voltage<br>(V)<br>(code) | Rated Capacitance<br>( $\mu$ F) | Case Size<br>$\phi$ D×L (mm) | tan $\delta$ | Leakage Current<br>( $\mu$ A)<br>(at 20°C after<br>2 minutes) | Impedance ( $\Omega$ )<br>max. |                  | Rated Ripple<br>(mArms)<br>(105°C/100kHz) | Part Number  |
|--------------------------------|---------------------------------|------------------------------|--------------|---|--------------------------------|------------------|---|--------------|
|                                |                                 |                              |              |   | 20°C/<br>100kHz                | -10°C/<br>100kHz |   |              |
| 10<br>(1A)                     | 6800                            | 16×30.5                      | 0.29         | 680   | 0.017                          | 0.050            | 3450                                      | UHE1A682MHD  |
|                                | 6800                            | 18×25                        | 0.29         | 680   | 0.019                          | 0.049            | 3140                                      | UHE1A682MHD6 |
|                                | 8200                            | 16×35.5                      | 0.33         | 820   | 0.015                          | 0.044            | 3610                                      | UHE1A822MHD  |
|                                | 8200                            | 18×30.5                      | 0.33         | 820   | 0.015                          | 0.040            | 4170                                      | UHE1A822MHD6 |
|                                | 10000                           | 16×40                        | 0.37         | 1000  | 0.013                          | 0.038            | 4080                                      | UHE1A103MHD  |
|                                | 10000                           | 18×35.5                      | 0.37         | 1000  | 0.014                          | 0.038            | 4220                                      | UHE1A103MHD6 |
|                                | 12000                           | 18×40                        | 0.41         | 1200  | 0.012                          | 0.032            | 4280                                      | UHE1A123MHD  |
| 16<br>(1C)                     | 330                             | 8×11.5                       | 0.16         | 52.8  | 0.13                           | 0.52             | 640                                       | UHE1C331MPD  |
|                                | 470                             | 8×15                         | 0.16         | 75.2  | 0.087                          | 0.35             | 840                                       | UHE1C471MPD  |
|                                | 470                             | 10×12.5                      | 0.16         | 75.2  | 0.080                          | 0.32             | 865                                       | UHE1C471MPD6 |
|                                | 680                             | 8×20                         | 0.16         | 108.8   | 0.069                          | 0.27             | 1050                                      | UHE1C681MPD  |
|                                | 680                             | 10×16                        | 0.16         | 108.8   | 0.060                          | 0.24             | 1210                                      | UHE1C681MPD6 |
|                                | 1000                            | 10×20                        | 0.16         | 160   | 0.046                          | 0.18             | 1400                                      | UHE1C102MPD  |
|                                | 1000                            | 12.5×15                      | 0.16         | 160   | 0.049                          | 0.16             | 1450                                      | UHE1C102MHD6 |
|                                | 1200                            | 10×25                        | 0.16         | 192   | 0.042                          | 0.17             | 1650                                      | UHE1C122MPD  |
|                                | 1500                            | 10×30.5                      | 0.16         | 240   | 0.031                          | 0.12             | 1910                                      | UHE1C152MPD  |
|                                | 1500                            | 12.5×20                      | 0.16         | 240   | 0.035                          | 0.12             | 1900                                      | UHE1C152MHD6 |
|                                | 1500                            | 16×15                        | 0.16         | 240   | 0.042                          | 0.12             | 1940                                      | UHE1C152MHD3 |
|                                | 2200                            | 12.5×25                      | 0.18         | 352   | 0.027                          | 0.089            | 2230                                      | UHE1C222MHD  |
|                                | 2200                            | 18×15                        | 0.18         | 352   | 0.043                          | 0.11             | 2210                                      | UHE1C222MHD6 |
|                                | 2700                            | 12.5×30.5                    | 0.18         | 432   | 0.024                          | 0.078            | 2650                                      | UHE1C272MHD  |
|                                | 2700                            | 16×20                        | 0.18         | 432   | 0.027                          | 0.078            | 2530                                      | UHE1C272MHD6 |
|                                | 3300                            | 12.5×35.5                    | 0.20         | 528   | 0.020                          | 0.065            | 2880                                      | UHE1C332MHD  |
|                                | 3900                            | 12.5×40                      | 0.20         | 624   | 0.017                          | 0.056            | 3350                                      | UHE1C392MHD  |
|                                | 3900                            | 16×25                        | 0.20         | 624   | 0.021                          | 0.060            | 2930                                      | UHE1C392MHD6 |
|                                | 3900                            | 16×20                        | 0.20         | 624   | 0.026                          | 0.067            | 2860                                      | UHE1C392MHD3 |
|                                | 4700                            | 16×30.5                      | 0.22         | 752   | 0.017                          | 0.050            | 3450                                      | UHE1C472MHD  |
|                                | 4700                            | 18×25                        | 0.22         | 752   | 0.019                          | 0.049            | 3140                                      | UHE1C472MHD6 |
|                                | 5600                            | 16×35.5                      | 0.24         | 896   | 0.015                          | 0.044            | 3610                                      | UHE1C562MHD  |
|                                | 5600                            | 18×30.5                      | 0.24         | 896   | 0.015                          | 0.040            | 4170                                      | UHE1C562MHD6 |
| 6800                           | 16×40                           | 0.26                         | 1088         | 0.013   | 0.038                          | 4080             | UHE1C682MHD                               |              |
| 8200                           | 18×35.5                         | 0.30                         | 1312         | 0.014   | 0.038                          | 4220             | UHE1C822MHD                               |              |
| 10000                          | 18×40                           | 0.34                         | 1600         | 0.012   | 0.032                          | 4280             | UHE1C103MHD                               |              |
| 25<br>(1E)                     | 220                             | 8×11.5                       | 0.14         | 55  | 0.13                           | 0.52             | 640                                       | UHE1E221MPD  |
|                                | 330                             | 8×15                         | 0.14         | 82.5  | 0.087                          | 0.35             | 840                                       | UHE1E331MPD  |
|                                | 330                             | 10×12.5                      | 0.14         | 82.5  | 0.080                          | 0.32             | 865                                       | UHE1E331MPD6 |
|                                | 470                             | 8×20                         | 0.14         | 117.5   | 0.069                          | 0.27             | 1050                                      | UHE1E471MPD  |
|                                | 470                             | 10×16                        | 0.14         | 117.5   | 0.060                          | 0.24             | 1210                                      | UHE1E471MPD6 |
|                                | 680                             | 10×20                        | 0.14         | 170   | 0.046                          | 0.18             | 1400                                      | UHE1E681MPD  |
|                                | 680                             | 12.5×15                      | 0.14         | 170   | 0.049                          | 0.16             | 1450                                      | UHE1E681MHD6 |
|                                | 820                             | 10×25                        | 0.14         | 205   | 0.042                          | 0.17             | 1650                                      | UHE1E821MPD  |
|                                | 1000                            | 10×30.5                      | 0.14         | 250   | 0.031                          | 0.12             | 1910                                      | UHE1E102MPD  |
|                                | 1000                            | 12.5×20                      | 0.14         | 250   | 0.035                          | 0.12             | 1900                                      | UHE1E102MHD6 |
|                                | 1000                            | 16×15                        | 0.14         | 250   | 0.042                          | 0.12             | 1940                                      | UHE1E102MHD3 |
|                                | 1200                            | 18×15                        | 0.14         | 300   | 0.043                          | 0.11             | 2210                                      | UHE1E122MHD  |

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### ■ Dimensions

| Rated Voltage (V)<br>(code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA)<br>(at 20°C after 2 minutes) | Impedance (Ω)<br>max. |                  | Rated Ripple (mA <sub>rms</sub> )<br>(105°C/100kHz) | Part Number  |
|-----------------------------|------------------------|---------------------|-------|---|-----------------------|------------------|---|--------------|
|                             |                        |                     |       |   | 20°C/<br>100kHz       | -10°C/<br>100kHz |   |              |
| 25<br>(1E)                  | 1500                   | 12.5×25             | 0.14  | 375   | 0.027                 | 0.089            | 2230  | UHE1E152MHD  |
|                             | 1800                   | 12.5×30.5           | 0.14  | 450   | 0.024                 | 0.078            | 2650  | UHE1E182MHD  |
|                             | 1800                   | 16×20               | 0.14  | 450   | 0.027                 | 0.078            | 2530  | UHE1E182MHD6 |
|                             | 2200                   | 12.5×35.5           | 0.16  | 550   | 0.020                 | 0.065            | 2880  | UHE1E222MHD  |
|                             | 2200                   | 18×20               | 0.16  | 550   | 0.026                 | 0.067            | 2860  | UHE1E222MHD6 |
|                             | 2700                   | 12.5×40             | 0.16  | 675   | 0.017                 | 0.056            | 3350  | UHE1E272MHD  |
|                             | 2700                   | 16×25               | 0.16  | 675   | 0.021                 | 0.060            | 2930  | UHE1E272MHD6 |
|                             | 3300                   | 16×30.5             | 0.18  | 825   | 0.017                 | 0.050            | 3450  | UHE1E332MHD  |
|                             | 3300                   | 18×25               | 0.18  | 825   | 0.019                 | 0.049            | 3140  | UHE1E332MHD6 |
|                             | 3900                   | 16×35.5             | 0.18  | 975   | 0.015                 | 0.044            | 3610  | UHE1E392MHD  |
|                             | 3900                   | 18×30.5             | 0.18  | 975   | 0.015                 | 0.040            | 4170  | UHE1E392MHD6 |
|                             | 4700                   | 16×40               | 0.20  | 1175  | 0.013                 | 0.038            | 4080  | UHE1E472MHD  |
|                             | 4700                   | 18×35.5             | 0.20  | 1175  | 0.014                 | 0.038            | 4220  | UHE1E472MHD6 |
|                             | 5600                   | 18×40               | 0.22  | 1400  | 0.012                 | 0.032            | 4280  | UHE1E562MHD  |
| 35<br>(1V)                  | 100                    | 8×11.5              | 0.12  | 35  | 0.13                  | 0.52             | 640   | UHE1V101MPD  |
|                             | 150                    | 8×11.5              | 0.12  | 52.5  | 0.13                  | 0.52             | 640   | UHE1V151MPD  |
|                             | 220                    | 8×15                | 0.12  | 77  | 0.087                 | 0.35             | 840   | UHE1V221MPD  |
|                             | 220                    | 10×12.5             | 0.12  | 77  | 0.080                 | 0.32             | 865   | UHE1V221MPD6 |
|                             | 270                    | 8×20                | 0.12  | 94.5  | 0.069                 | 0.27             | 1050  | UHE1V271MPD  |
|                             | 330                    | 10×16               | 0.12  | 115.5   | 0.060                 | 0.24             | 1210  | UHE1V331MPD  |
|                             | 470                    | 10×20               | 0.12  | 164.5   | 0.046                 | 0.18             | 1400  | UHE1V471MPD  |
|                             | 470                    | 12.5×15             | 0.12  | 164.5   | 0.049                 | 0.16             | 1450  | UHE1V471MHD6 |
|                             | 560                    | 10×25               | 0.12  | 196   | 0.042                 | 0.17             | 1650  | UHE1V561MPD  |
|                             | 680                    | 10×30.5             | 0.12  | 238   | 0.031                 | 0.12             | 1910  | UHE1V681MPD  |
|                             | 680                    | 12.5×20             | 0.12  | 238   | 0.035                 | 0.12             | 1900  | UHE1V681MHD6 |
|                             | 680                    | 16×15               | 0.12  | 238   | 0.042                 | 0.12             | 1940  | UHE1V681MHD3 |
|                             | 1000                   | 12.5×25             | 0.12  | 350   | 0.027                 | 0.089            | 2230  | UHE1V102MHD  |
|                             | 1000                   | 18×15               | 0.12  | 350   | 0.043                 | 0.11             | 2210  | UHE1V102MHD6 |
|                             | 1200                   | 12.5×30.5           | 0.12  | 420   | 0.024                 | 0.078            | 2650  | UHE1V122MHD  |
|                             | 1200                   | 16×20               | 0.12  | 420   | 0.027                 | 0.078            | 2530  | UHE1V122MHD6 |
|                             | 1500                   | 12.5×35.5           | 0.12  | 525   | 0.020                 | 0.065            | 2880  | UHE1V152MHD  |
|                             | 1800                   | 12.5×40             | 0.12  | 630   | 0.017                 | 0.056            | 3350  | UHE1V182MHD  |
|                             | 1800                   | 16×25               | 0.12  | 630   | 0.021                 | 0.060            | 2930  | UHE1V182MHD6 |
|                             | 1800                   | 18×20               | 0.12  | 630   | 0.026                 | 0.067            | 2860  | UHE1V182MHD3 |
|                             | 2200                   | 16×30.5             | 0.14  | 770   | 0.017                 | 0.050            | 3450  | UHE1V222MHD  |
|                             | 2200                   | 18×25               | 0.14  | 770   | 0.019                 | 0.049            | 3140  | UHE1V222MHD6 |
|                             | 2700                   | 16×35.5             | 0.14  | 945   | 0.015                 | 0.044            | 3610  | UHE1V272MHD  |
|                             | 2700                   | 18×30.5             | 0.14  | 945   | 0.015                 | 0.040            | 4170  | UHE1V272MHD6 |
|                             | 3300                   | 16×40               | 0.16  | 1155  | 0.013                 | 0.038            | 4080  | UHE1V332MHD  |
|                             | 3300                   | 18×35.5             | 0.16  | 1155  | 0.014                 | 0.038            | 4220  | UHE1V332MHD6 |
| 3900                        | 18×40                  | 0.16                | 1365  | 0.012   | 0.032                 | 4280             | UHE1V392MHD   |              |

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).  
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

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## ■ Dimensions

| Rated Voltage<br>(V)<br>(code) | Rated Capacitance<br>( $\mu$ F) | Case Size<br>$\phi$ D×L (mm) | tan $\delta$ | Leakage Current<br>( $\mu$ A)<br>(at 20°C after<br>2 minutes) | Impedance ( $\Omega$ )<br>max. |                  | Rated Ripple<br>(mArms)<br>(105°C/100kHz) | Part Number  |
|--------------------------------|---------------------------------|------------------------------|--------------|---|--------------------------------|------------------|---|--------------|
|                                |                                 |                              |              |   | 20°C/<br>100kHz                | -10°C/<br>100kHz |   |              |
| 50<br>(1H)                     | 100                             | 8×11.5                       | 0.10         | 50  | 0.17                           | 0.68             | 555                                       | UHE1H101MPD  |
|                                | 120                             | 8×15                         | 0.10         | 60  | 0.12                           | 0.48             | 730                                       | UHE1H121MPD  |
|                                | 150                             | 10×12.5                      | 0.10         | 75  | 0.12                           | 0.48             | 760                                       | UHE1H151MPD  |
|                                | 180                             | 8×20                         | 0.10         | 90  | 0.091                          | 0.36             | 910                                       | UHE1H181MPD  |
|                                | 220                             | 10×16                        | 0.10         | 110   | 0.084                          | 0.34             | 1050                                      | UHE1H221MPD  |
|                                | 270                             | 10×20                        | 0.10         | 135   | 0.060                          | 0.24             | 1220                                      | UHE1H271MPD  |
|                                | 270                             | 12.5×15                      | 0.10         | 135   | 0.061                          | 0.20             | 1260                                      | UHE1H271MHD6 |
|                                | 330                             | 10×25                        | 0.10         | 165   | 0.055                          | 0.22             | 1440                                      | UHE1H331MPD  |
|                                | 330                             | 10×20                        | 0.10         | 165   | 0.060                          | 0.24             | 1220                                      | UHE1H331MPD6 |
|                                | 470                             | 10×30.5                      | 0.10         | 235   | 0.043                          | 0.17             | 1690                                      | UHE1H471MPD  |
|                                | 470                             | 12.5×20                      | 0.10         | 235   | 0.045                          | 0.15             | 1660                                      | UHE1H471MHD6 |
|                                | 470                             | 16×15                        | 0.10         | 235   | 0.055                          | 0.17             | 1690                                      | UHE1H471MHD3 |
|                                | 560                             | 12.5×25                      | 0.10         | 280   | 0.034                          | 0.11             | 1950                                      | UHE1H561MHD  |
|                                | 560                             | 18×15                        | 0.10         | 280   | 0.054                          | 0.15             | 1930                                      | UHE1H561MHD6 |
|                                | 680                             | 12.5×30.5                    | 0.10         | 340   | 0.030                          | 0.10             | 2310                                      | UHE1H681MHD  |
|                                | 820                             | 12.5×35.5                    | 0.10         | 410   | 0.025                          | 0.083            | 2510                                      | UHE1H821MHD  |
|                                | 820                             | 16×20                        | 0.10         | 410   | 0.034                          | 0.10             | 2210                                      | UHE1H821MHD6 |
|                                | 1000                            | 12.5×40                      | 0.10         | 500   | 0.021                          | 0.069            | 2920                                      | UHE1H102MHD  |
|                                | 1000                            | 16×25                        | 0.10         | 500   | 0.025                          | 0.075            | 2555                                      | UHE1H102MHD6 |
|                                | 1000                            | 18×20                        | 0.10         | 500   | 0.036                          | 0.097            | 2490                                      | UHE1H102MHD3 |
|                                | 1200                            | 16×30.5                      | 0.10         | 600   | 0.022                          | 0.066            | 3010                                      | UHE1H122MHD  |
|                                | 1200                            | 18×25                        | 0.10         | 600   | 0.026                          | 0.070            | 2740                                      | UHE1H122MHD6 |
|                                | 1500                            | 16×35.5                      | 0.10         | 750   | 0.019                          | 0.057            | 3150                                      | UHE1H152MHD  |
|                                | 1800                            | 16×40                        | 0.10         | 900   | 0.016                          | 0.048            | 3710                                      | UHE1H182MHD  |
| 1800                           | 18×30.5                         | 0.10                         | 900          | 0.021   | 0.057                          | 3635             | UHE1H182MHD6                              |              |
| 2200                           | 18×35.5                         | 0.12                         | 1100         | 0.017   | 0.046                          | 3680             | UHE1H222MHD6                              |              |
| 2700                           | 18×40                           | 0.12                         | 1350         | 0.014   | 0.038                          | 3800             | UHE1H272MHD                               |              |
| 63<br>(1J)                     | 47                              | 8×11.5                       | 0.09         | 29.61   | 0.63                           | 2.80             | 260                                       | UHE1J470MPD  |
|                                | 56                              | 8×11.5                       | 0.09         | 35.28   | 0.63                           | 2.80             | 260                                       | UHE1J560MPD  |
|                                | 82                              | 8×15                         | 0.09         | 51.66   | 0.45                           | 2.10             | 335                                       | UHE1J820MPD  |
|                                | 82                              | 10×12.5                      | 0.09         | 51.66   | 0.43                           | 1.80             | 325                                       | UHE1J820MPD6 |
|                                | 120                             | 8×20                         | 0.09         | 75.6  | 0.33                           | 1.60             | 408                                       | UHE1J121MPD  |
|                                | 120                             | 10×16                        | 0.09         | 75.6  | 0.31                           | 1.50             | 400                                       | UHE1J121MPD6 |
|                                | 180                             | 10×20                        | 0.09         | 113.4   | 0.21                           | 0.94             | 518                                       | UHE1J181MPD  |
|                                | 180                             | 12.5×15                      | 0.09         | 113.4   | 0.23                           | 1.10             | 527                                       | UHE1J181MHD6 |
|                                | 220                             | 10×25                        | 0.09         | 138.6   | 0.20                           | 0.84             | 595                                       | UHE1J221MPD  |
|                                | 270                             | 10×30.5                      | 0.09         | 170.1   | 0.15                           | 0.71             | 740                                       | UHE1J271MPD  |
|                                | 270                             | 12.5×20                      | 0.09         | 170.1   | 0.16                           | 0.64             | 765                                       | UHE1J271MHD6 |
|                                | 270                             | 16×15                        | 0.09         | 170.1   | 0.14                           | 0.66             | 895                                       | UHE1J271MHD3 |
|                                | 330                             | 12.5×25                      | 0.09         | 207.9   | 0.12                           | 0.45             | 875                                       | UHE1J331MHD  |
|                                | 390                             | 18×15                        | 0.09         | 245.7   | 0.12                           | 0.50             | 1030                                      | UHE1J391MHD  |
|                                | 470                             | 12.5×30.5                    | 0.09         | 296.1   | 0.10                           | 0.42             | 1010                                      | UHE1J471MHD  |
|                                | 470                             | 16×20                        | 0.09         | 296.1   | 0.091                          | 0.38             | 1130                                      | UHE1J471MHD6 |
|                                | 560                             | 12.5×35.5                    | 0.09         | 352.8   | 0.083                          | 0.35             | 1140                                      | UHE1J561MHD  |
|                                | 560                             | 16×25                        | 0.09         | 352.8   | 0.073                          | 0.27             | 1350                                      | UHE1J561MHD6 |

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If there is no size code in the part number, please add size code "1" and then add the appropriate code.

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## ■ Dimensions



| Rated Voltage<br>(V)<br>(code) | Rated Capacitance<br>( $\mu$ F) | Case Size<br>$\phi$ D $\times$ L (mm) | tan $\delta$ | Leakage Current<br>( $\mu$ A)<br>(at 20°C after<br>2 minutes) | Impedance ( $\Omega$ )<br>max. |                  | Rated Ripple<br>(mArms)<br>(105°C/100kHz) | Part Number  |
|--------------------------------|---------------------------------|---------------------------------------|--------------|---|--------------------------------|------------------|---|--------------|
|                                |                                 |                                       |              |   | 20°C/<br>100kHz                | -10°C/<br>100kHz |   |              |
| 63<br>(1J)                     | 680                             | 12.5 $\times$ 40                      | 0.09         | 428.4   | 0.071                          | 0.30             | 1280                                      | UHE1J681MHD  |
|                                | 680                             | 18 $\times$ 20                        | 0.09         | 428.4   | 0.080                          | 0.30             | 1300                                      | UHE1J681MHD6 |
|                                | 820                             | 16 $\times$ 30.5                      | 0.09         | 516.6   | 0.054                          | 0.20             | 1650                                      | UHE1J821MHD  |
|                                | 820                             | 18 $\times$ 25                        | 0.09         | 516.6   | 0.057                          | 0.21             | 1560                                      | UHE1J821MHD6 |
|                                | 1000                            | 16 $\times$ 35.5                      | 0.09         | 630   | 0.045                          | 0.17             | 1900                                      | UHE1J102MHD  |
|                                | 1000                            | 18 $\times$ 30.5                      | 0.09         | 630   | 0.047                          | 0.17             | 1720                                      | UHE1J102MHD6 |
|                                | 1200                            | 16 $\times$ 40                        | 0.09         | 756   | 0.040                          | 0.15             | 2130                                      | UHE1J122MHD  |
|                                | 1200                            | 18 $\times$ 35.5                      | 0.09         | 756   | 0.040                          | 0.15             | 1890                                      | UHE1J122MHD6 |
|                                | 1500                            | 18 $\times$ 40                        | 0.09         | 945   | 0.036                          | 0.13             | 2470                                      | UHE1J152MHD  |
| 100<br>(2A)                    | 27                              | 8 $\times$ 11.5                       | 0.08         | 27  | 0.63                           | 2.80             | 260                                       | UHE2A270MPD  |
|                                | 39                              | 8 $\times$ 15                         | 0.08         | 39  | 0.45                           | 2.10             | 335                                       | UHE2A390MPD  |
|                                | 47                              | 10 $\times$ 12.5                      | 0.08         | 47  | 0.43                           | 1.80             | 325                                       | UHE2A470MPD  |
|                                | 56                              | 8 $\times$ 20                         | 0.08         | 56  | 0.33                           | 1.60             | 408                                       | UHE2A560MPD  |
|                                | 68                              | 10 $\times$ 16                        | 0.08         | 68  | 0.31                           | 1.50             | 400                                       | UHE2A680MPD  |
|                                | 82                              | 10 $\times$ 20                        | 0.08         | 82  | 0.21                           | 0.94             | 518                                       | UHE2A820MPD  |
|                                | 82                              | 12.5 $\times$ 15                      | 0.08         | 82  | 0.23                           | 1.10             | 527                                       | UHE2A820MHD6 |
|                                | 100                             | 10 $\times$ 25                        | 0.08         | 100   | 0.20                           | 0.84             | 595                                       | UHE2A101MPD  |
|                                | 100                             | 12.5 $\times$ 20                      | 0.08         | 100   | 0.20                           | 0.84             | 740                                       | UHE2A101MHD6 |
|                                | 120                             | 10 $\times$ 30.5                      | 0.08         | 120   | 0.15                           | 0.71             | 740                                       | UHE2A121MPD  |
|                                | 120                             | 12.5 $\times$ 20                      | 0.08         | 120   | 0.16                           | 0.64             | 765                                       | UHE2A121MHD6 |
|                                | 150                             | 16 $\times$ 15                        | 0.08         | 150   | 0.14                           | 0.66             | 895                                       | UHE2A151MHD  |
|                                | 180                             | 12.5 $\times$ 25                      | 0.08         | 180   | 0.12                           | 0.45             | 875                                       | UHE2A181MHD  |
|                                | 180                             | 18 $\times$ 15                        | 0.08         | 180   | 0.12                           | 0.50             | 1030                                      | UHE2A181MHD6 |
|                                | 220                             | 12.5 $\times$ 30.5                    | 0.08         | 220   | 0.10                           | 0.42             | 1010                                      | UHE2A221MHD  |
|                                | 220                             | 16 $\times$ 20                        | 0.08         | 220   | 0.091                          | 0.38             | 1130                                      | UHE2A221MHD6 |
|                                | 270                             | 12.5 $\times$ 35.5                    | 0.08         | 270   | 0.083                          | 0.35             | 1140                                      | UHE2A271MHD  |
|                                | 270                             | 16 $\times$ 25                        | 0.08         | 270   | 0.073                          | 0.27             | 1350                                      | UHE2A271MHD6 |
|                                | 330                             | 12.5 $\times$ 40                      | 0.08         | 330   | 0.071                          | 0.30             | 1280                                      | UHE2A331MHD  |
|                                | 330                             | 18 $\times$ 20                        | 0.08         | 330   | 0.080                          | 0.30             | 1300                                      | UHE2A331MHD6 |
|                                | 390                             | 16 $\times$ 30.5                      | 0.08         | 390   | 0.054                          | 0.20             | 1650                                      | UHE2A391MHD  |
|                                | 390                             | 18 $\times$ 25                        | 0.08         | 390   | 0.057                          | 0.21             | 1560                                      | UHE2A391MHD6 |
|                                | 470                             | 16 $\times$ 35.5                      | 0.08         | 470   | 0.045                          | 0.17             | 1900                                      | UHE2A471MHD  |
|                                | 470                             | 18 $\times$ 30.5                      | 0.08         | 470   | 0.047                          | 0.17             | 1720                                      | UHE2A471MHD6 |
| 560                            | 16 $\times$ 40                  | 0.08                                  | 560          | 0.040   | 0.15                           | 2130             | UHE2A561MHD                               |              |
| 680                            | 18 $\times$ 35.5                | 0.08                                  | 680          | 0.040   | 0.15                           | 1890             | UHE2A681MHD                               |              |
| 820                            | 18 $\times$ 40                  | 0.08                                  | 820          | 0.036   | 0.13                           | 2470             | UHE2A821MHD                               |              |

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- For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.

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