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# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

# UPH

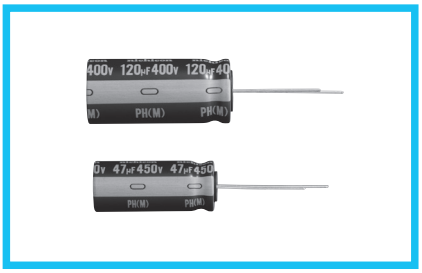
High Voltage, Miniature-sized

Smaller

HR High Ripple Current

- High ripple current.
- Load life of 2000 hours at 105°C.
- Suited for ballast applications.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).

UPZ
Smaller
UPH

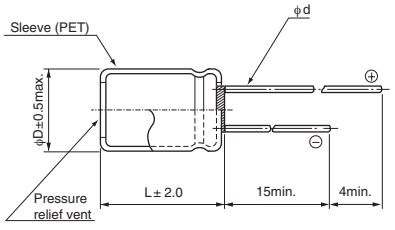


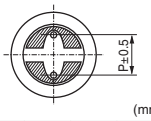
## ■Specifications

| Item | Performance Characteristics |
|---|---|
| Category Temperature Range | −40 to +105°C |
| Rated Voltage Range | 400 to 450V |
| Rated Capacitance Range | 27 to 220μF |
| Capacitance Tolerance | ±20% at 120Hz, 20°C |
| Leakage Current ※ | After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.04CV+100 (μA). |
| Tangent of loss angle (tan δ) | Measurement frequency : 120Hz at 20°C<br>Rated voltage (V): 400 / 420 / 450<br>tan δ (max.): 0.15 / 0.20 / 0.20 |
| Stability at Low Temperature | Measurement frequency : 120Hz<br>Rated voltage (V): 400 / 420 / 450<br>Impedance ratio (max.) Z−(25°C) / Z(+20°C): 8 / 8 / 8 |
| Endurance | The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours at 105°C, the peak voltage shall not exceed the rated voltage.<br>Capacitance change: Within ±20% of the initial capacitance value<br>tan δ: 200% or less than the initial specified value<br>Leakage current: Less than or equal to the initial specified value |
| Shelf Life | After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above. |
| Marking | Printed with white color letter on dark brown sleeve. |

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

## ■Radial Lead Type




(mm)

| φD | 10 | 12.5 | 16 | 18 |
|---|---|---|---|---|
| P | 5.0 | 5.0 | 7.5 | 7.5 |
| φd | 0.6 | 0.8 | 0.8 | 0.8 |

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

## Type numbering system (Example : 400V 220μF)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| U | P | H | 2 | G | 2 | 2 | 1 | M | H | D | |

- 12: Size code
- 10, 11: Configuration ※
- 9: Capacitance tolerance (±20%)
- 6, 7, 8: Rated capacitance (220μF)
- 4, 5: Rated voltage (400V)
- 3: Series name
- 1, 2: Type

※Configuration

| φ D | Pb-free leadwire Pb-free PET sleeve |
|---|---|
| 10 | PD |
| 12.5 to 18 | HD |

## • Frequency coefficient of rated ripple current

| Frequency | 60Hz | 120Hz | 500Hz | 1kHz | 10kHz or more |
|---|---|---|---|---|---|
| Coefficient | 0.80 | 1.00 | 1.25 | 1.40 | 1.50 |

●Dimension table in next page.

# UPH

■Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) (at 20℃ after 1 minute) | Rated Ripple (mArms) (105℃/120Hz) | Part Number |
|---|---|---|---|---|---|---|
| 400 (2G) | 33 | 10×31.5 | 0.15 | 628 | 330 | UPH2G330MPD |
| | 56 | 12.5×31.5 | 0.15 | 996 | 470 | UPH2G560MHD |
| | 68 | 12.5×35.5 | 0.15 | 1188 | 540 | UPH2G680MHD |
| | 82 | 12.5×40 | 0.15 | 1412 | 620 | UPH2G820MHD |
| | 100 | 16×31.5 | 0.15 | 1700 | 710 | UPH2G101MHD |
| | 120 | 16×35.5 | 0.15 | 2020 | 800 | UPH2G121MHD |
| | 150 | 16×40 | 0.15 | 2500 | 920 | UPH2G151MHD |
| | 150 | 18×31.5 | 0.15 | 2500 | 890 | UPH2G151MHD6 |
| | 180 | 18×40 | 0.15 | 2980 | 1060 | UPH2G181MHD |
| | 220 | 18×46 | 0.15 | 3620 | 1200 | UPH2G221MHD |
| 420 (W6) | 33 | 10×31.5 | 0.20 | 654.4 | 320 | UPHW6330MPD |
| | 56 | 12.5×31.5 | 0.20 | 1040.8 | 460 | UPHW6560MHD |
| | 100 | 16×31.5 | 0.20 | 1780 | 690 | UPHW6101MHD |
| | 120 | 16×35.5 | 0.20 | 2116 | 780 | UPHW6121MHD |
| | 120 | 18×31.5 | 0.20 | 2116 | 800 | UPHW6121MHD6 |
| | 150 | 18×35.5 | 0.20 | 2620 | 920 | UPHW6151MHD |
| | 180 | 18×40 | 0.20 | 3124 | 1040 | UPHW6181MHD |
| 450 (2W) | 27 | 10×31.5 | 0.20 | 586 | 300 | UPH2W270MPD |
| | 47 | 12.5×31.5 | 0.20 | 946 | 430 | UPH2W470MHD |
| | 56 | 12.5×35.5 | 0.20 | 1108 | 490 | UPH2W560MHD |
| | 68 | 12.5×40 | 0.20 | 1324 | 560 | UPH2W680MHD |
| | 82 | 16×31.5 | 0.20 | 1576 | 640 | UPH2W820MHD |
| | 100 | 16×35.5 | 0.20 | 1900 | 730 | UPH2W101MHD |
| | 120 | 16×40 | 0.20 | 2260 | 820 | UPH2W121MHD |
| | 120 | 18×31.5 | 0.20 | 2260 | 800 | UPH2W121MHD6 |
| | 150 | 18×40 | 0.20 | 2800 | 970 | UPH2W151MHD |
| | 180 | 18×46 | 0.20 | 3340 | 1090 | UPH2W181MHD |

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.

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