# THE DATASHEET OF

# ULR2E150MNL1GS

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# ALUMINUM ELECTROLYTIC CAPACITORS

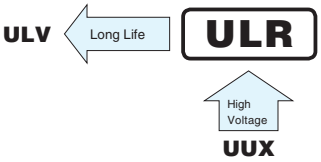
nichicon

# ULR

Chip Type, High Voltage.

For SMD

- Chip Type, high Voltage.
- Applicable to automatic mounting machine using carrier tape.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
- AEC-Q200 Qualified. Please contact us for details.



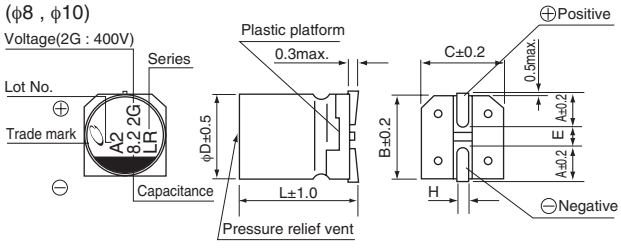
## ■Specifications

| Item | Performance Characteristics |
|---|---|
| Category Temperature Range | −40 to +105°C |
| Rated Voltage Range | 160 to 500V |
| Rated Capacitance Range | 2.7 to 39μF |
| 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): 160, 200, 250, 400, 450, 500<br>tan δ (max.): 0.20, 0.20, 0.25, 0.25, 0.30, 0.30 |
| Stability at Low Temperature | Measurement frequency: 120Hz<br>Rated voltage (V): 160, 200, 250, 400, 450, 500<br>Impedance ratio ZT / Z20 (max.) Z(−40°C) / Z(+20°C): 6, 6, 10, 10, 15, 15 |
| Endurance | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 3000 hours at 105°C.<br>Capacitance change: Within ±20% of the initial capacitance value<br>tan δ: 200% or less than the intial 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. |
| Resistance to soldering heat | The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the characteristic requirements listed at right when they are removed from the plate.<br>Capacitance change: Within ±10% of the initial capacitance value<br>tan δ: Less than or equal to the initial specified value<br>Leakage current: Less than or equal to the initial specified value |
| Marking | Black print on the case top. |

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

## ■Chip Type

(φ8 , φ10)




(mm)

| φD×L | 8×10 | 10×10 | 10×13.5 |
|---|---|---|---|
| A | 2.9 | 3.2 | 3.2 |
| B | 8.3 | 10.3 | 10.3 |
| C | 8.3 | 10.3 | 10.3 |
| E | 3.1 | 4.5 | 4.5 |
| L | 10 | 10 | 13.5 |
| H | 0.8 to 1.1 | 0.8 to 1.1 | 0.8 to 1.1 |

Voltage

| V | 160 | 200 | 250 | 400 | 450 | 500 |
|---|---|---|---|---|---|---|
| Code | 2C | 2D | 2E | 2G | 2W | 2H |

## Type numbering system (Example : 400V 8.2μF)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U | L | R | 2 | G | 8 | R | 2 | M | N | L | 1 | G | S |

- 14: Taping code
- 11–13: Configuration
- 9: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (8.2μF)
- 4–5: Rated voltage (400V)
- 3: Series name
- 1: Type

## ● Frequency coefficient of rated ripple current

| Frequency | 50 Hz | 120 Hz | 300 Hz | 1 kHz | 10 kHz or more |
|---|---|---|---|---|---|
| Coefficient | 0.80 | 1.00 | 1.25 | 1.40 | 1.60 |

● Dimension table in next page.

# ULR

## ■ 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 |
|---|---|---|---|---|---|---|
| 160 (2C) | 15 | 8×10 | 0.20 | 196 | 50 | ULR2C150MNL1GS |
| | 27 | 10×10 | 0.20 | 272.8 | 65 | ULR2C270MNL1GS |
| | 39 | 10×13.5 | 0.20 | 349.6 | 70 | ULR2C390MNL1GS |
| 200 (2D) | 12 | 8×10 | 0.20 | 196 | 50 | ULR2D120MNL1GS |
| | 22 | 10×10 | 0.20 | 276 | 65 | ULR2D220MNL1GS |
| | 33 | 10×13.5 | 0.20 | 364 | 70 | ULR2D330MNL1GS |
| 250 (2E) | 10 | 8×10 | 0.25 | 200 | 35 | ULR2E100MNL1GS |
| | 15 | 10×10 | 0.25 | 250 | 50 | ULR2E150MNL1GS |
| | 22 | 10×13.5 | 0.25 | 320 | 55 | ULR2E220MNL1GS |
| 400 (2G) | 4.7 | 8×10 | 0.25 | 175.2 | 35 | ULR2G4R7MNL1GS |
| | 8.2 | 10×10 | 0.25 | 231.2 | 50 | ULR2G8R2MNL1GS |
| | 12 | 10×13.5 | 0.25 | 292 | 55 | ULR2G120MNL1GS |
| 450 (2W) | 3.9 | 8×10 | 0.30 | 170.2 | 25 | ULR2W3R9MNL1GS |
| | 6.8 | 10×10 | 0.30 | 222.4 | 40 | ULR2W6R8MNL1GS |
| | 10 | 10×13.5 | 0.30 | 280 | 45 | ULR2W100MNL1GS |
| 500 (2H) | 2.7 | 8×10 | 0.30 | 154 | 20 | ULR2H2R7MNL1GS |
| | 3.9 | 10×10 | 0.30 | 178 | 35 | ULR2H3R9MNL1GS |
| | 5.6 | 10×13.5 | 0.30 | 212 | 40 | ULR2H5R6MNL1GS |

- For taping specifications, recommended land size/soldering by reflow and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.

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