

ALUMINUM ELECTROLYTIC CAPACITORS

ULH

Chip Type, High Voltage.
High Reliability.



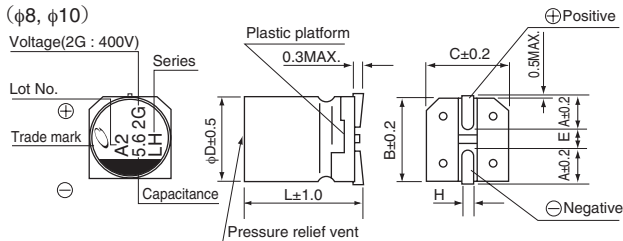
- Chip type, High voltage and High Reliability.
- Load life of 4000 hours at +125°C.
- Applicable to automatic mounting machine using carrier tape.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
- AEC-Q200 compliant. Please contact us for details.



Specifications

Item	Performance Characteristics												
Category Temperature Range	-40 to +125°C												
Rated Voltage Range	160 to 450V												
Rated Capacitance Range	2.2 to 27μF												
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												
	Rated voltage (V)	160	200	250	400	450							
	tan δ (MAX.)	0.20	0.20	0.25	0.25	0.30							
Stability at Low Temperature	Measurement frequency : 120Hz												
	Rated voltage (V)	160	200	250	400	450							
	Impedance ratio ZT / Z20 (MAX.)	Z-40°C / Z+20°C	6	6	10	10	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 4000 hours at 125°C.					<table border="1"> <tr> <td>Capacitance change</td> <td>Within ±30% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>300% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>		Capacitance change	Within ±30% of the initial capacitance value	tan δ	300% or less than the initial specified value	Leakage current	Less than or equal to the initial specified value
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tan δ	300% or less than the initial specified value												
Leakage current	Less than or equal to the initial specified value												
Shelf Life	After storing the capacitors under no load at 125°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.					<table border="1"> <tr> <td>Capacitance change</td> <td>Within ±10% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>Less than or equal to the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>		Capacitance change	Within ±10% of the initial capacitance value	tan δ	Less than or equal to the initial specified value	Leakage current	Less than or equal to the initial specified value
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tan δ	Less than or equal to the initial specified value												
Leakage current	Less than or equal to the initial specified value												
Marking	Black print on the case top.												

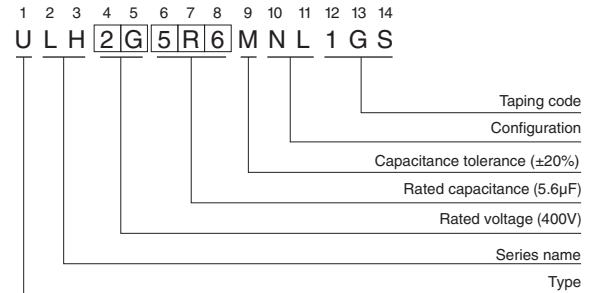
Chip Type



φD×L (mm)	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	160	200	250	400	450
Code	2C	2D	2E	2G	2W

Type numbering system (Example : 400V 5.6μF)



Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

● Dimension table in next page.

ULH

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μ F)	Case Size ϕ D \times L (mm)	tan δ	Leakage Current (μ A) (at 20°C after 1 minute)	Rated Ripple (mArms) (125°C/120Hz)	Part Number
160 (2C)	12	8 \times 10	0.20	176.8	45	ULH2C120MNL1GS
	18	10 \times 10	0.20	215.2	60	ULH2C180MNL1GS
	27	10 \times 13.5	0.20	272.8	65	ULH2C270MNL1GS
200 (2D)	10	8 \times 10	0.20	180	45	ULH2D100MNL1GS
	15	10 \times 10	0.20	220	60	ULH2D150MNL1GS
	22	10 \times 13.5	0.20	276	65	ULH2D220MNL1GS
250 (2E)	7.5	8 \times 10	0.25	175	30	ULH2E7R5MNL1GS
	12	10 \times 10	0.25	220	45	ULH2E120MNL1GS
	15	10 \times 13.5	0.25	250	50	ULH2E150MNL1GS
400 (2G)	3.3	8 \times 10	0.25	152.8	30	ULH2G3R3MNL1GS
	5.6	10 \times 10	0.25	189.6	45	ULH2G5R6MNL1GS
	7.5	10 \times 13.5	0.25	220	50	ULH2G7R5MNL1GS
450 (2W)	2.2	8 \times 10	0.30	139.6	20	ULH2W2R2MNL1GS
	3.9	10 \times 10	0.30	170.2	35	ULH2W3R9MNL1GS
	5.6	10 \times 13.5	0.30	200.8	40	ULH2W5R6MNL1GS

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