

# ULR

## Aluminum Polymer Capacitors

### High Temperature



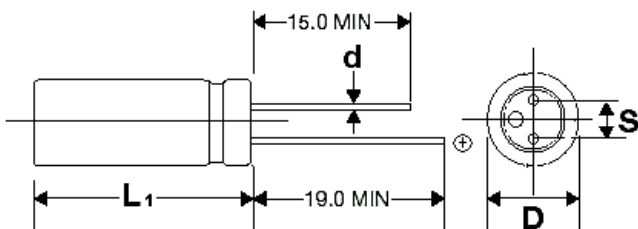
#### FEATURES

High Temperature – Very Low ESR – High Ripple Current – Stable with Temperature – High Frequency

#### APPLICATIONS

DC-DC Converters – Voltage Regulators – Decoupling

<b>Operating Temperature Range</b>		<b>-55°C to +105°C</b>					
<b>Capacitance Tolerance</b>		<b>+20% at 120 Hz, 20°C</b>					
<b>Surge Voltage</b>	<b>WVDC</b>	<b>2.5</b>	<b>4</b>	<b>10</b>	<b>16</b>	<b>20</b>	<b>25</b>
	<b>SVDC</b>	1.15 x rated WVDC					
<b>Dissipation Factor 120 Hz, 20°C</b>		<b>10% MAX</b>					
<b>Leakage Current</b>		<b>2 Minutes</b>					
		0.2CV or 280uA, whichever is greater					
<b>Low Temperature Stability Impedance Ratio (100 kHz)</b>	<b>-55°C/ +20°C</b>	≤1.25					
	<b>+105°C/ +20°C</b>	≤1.25					
<b>Load Life</b>		<b>2000 hours at 105°C with rated WVDC applied</b>					
		<b>Capacitance Change</b>	≤20% of initial measured value				
		<b>Dissipation Factor</b>	≤150% of maximum specified value				
		<b>ESR</b>	≤150% of maximum specified value				
		<b>Leakage Current</b>	≤100% of maximum specified value				
<b>Damp Heat test</b>		<b>1000 hours at 60°C with rated voltage applied at 90-95% R.H.</b>					
		<b>Capacitance Change</b>	≤20% of initial measured value				
		<b>Dissipation Factor</b>	≤150% of maximum specified value				
		<b>ESR</b>	≤150% of maximum specified value				
		<b>Leakage Current</b>	≤100% of maximum specified value				
<b>Surge Voltage test</b>		<b>1000 cycles at 105°C with rated surge voltage applied for 30 seconds through a 1kΩ resistor and discharged for 5 minutes and 30 seconds</b>					
		<b>Capacitance Change</b>	≤20% of initial measured value				
		<b>Dissipation Factor</b>	≤150% of maximum specified value				
		<b>ESR</b>	≤150% of maximum specified value				
		<b>Leakage Current</b>	≤100% of maximum specified value				
<b>Ripple Current Multipliers</b>		<b>Frequency (Hz)</b>					
		<b>120Hz ≤ f &lt; 1kHz</b>	<b>1kHz ≤ f &lt; 10kHz</b>	<b>10kHz ≤ f &lt; 100kHz</b>	<b>100kHz ≤ f ≤ 500kHz</b>		
		0.05	0.3	0.7	1.0		



D+0.5	5	6.3	8	10
S±0.5	2	2.5	3.5	5.0
d	0.5 (L ≤ 7mm) 0.6 (L > 7mm)	0.45 (L ≤ 6mm) 0.6 (L > 6mm)	0.6	0.6

L<sub>1</sub> = L + 1.0 mm MAX, L < 11 mm  
L<sub>1</sub> = L + 1.5 mm MAX, L ≥ 11 mm

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Feb-17

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+105°C 2000 hour Low ESR

Capacitance (µF)	WVDC	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum ESR (mΩ) 100 kHz, +20°C	Leakage Current (µA)	Maximum RMS Ripple Current (mA) 100 kHz, +105°C	Dims DxL (mm)
22	10	226ULR010MEF	7.54	45	280	1870	6.3x8
22	25	226ULR025MEF	7.54	45	280	1870	6.3x8
33	10	336ULR010MEF	5.02	35	280	2000	6.3x8
33	20	336ULR020MEF	5.02	35	280	2000	6.3x8
33	25	336ULR025MFF	5.02	40	280	2050	8x8
47	10	476ULR010MEF	3.53	32	800	2100	6.3x8
47	20	476ULR020MFF	3.53	33	280	2100	8x8
47	25	476ULR025MFF	3.53	36	280	2100	8x8
100	16	107ULR016MEH	1.66	24	320	2820	6.3x11
100	16	107ULR016MEF	1.66	24	320	2820	6.3x8
100	20	107ULR020MFH	1.66	32	400	2750	8x11.5
100	25	107ULR025MFH	1.66	10	500	2750	8x11.5
100	35	107ULR035MGU	1.66	60	700	2000	10x12.5
150	20	157ULR020MGU	1.11	28	600	2900	10x12.5
180	16	187ULR016MFH	0.92	13	576	5000	8x11.5
220	2.5	227ULR2R5MEW	0.75	15	280	3400	6.3x6
220	10	227ULR010MEF	0.75	12	440	3200	6.3x8
220	10	227ULR010MEW	0.75	15	440	2700	6.3x6
220	16	227ULR016MFH	0.75	13	704	5000	8x11.5
220	16	227ULR016MEH	0.75	20	704	3100	6.3x11
220	16	227ULR016MFF	0.75	13	704	4300	8x8
220	35	227ULR035MGU	0.75	50	1540	2500	10x12.5
270	4	277ULR4R0MEF	0.61	12	280	3200	6.3x8
270	6.3	277ULR6R3MDY	0.61	11	340	3700	5x7
270	10	277ULR010MFH	0.61	11	540	5100	8x11.5
270	10	277ULR010MFF	0.61	14	540	4420	8x8
270	16	277ULR016MFH	0.61	13	864	5000	8x11.5
270	16	277ULR016MFF	0.61	13	864	4300	8x8
330	6.3	337ULR6R3MEF	0.5	10	416	4500	6.3x8
330	6.3	337ULR6R3MFF	0.5	8	416	5700	8x8
330	6.3	337ULR6R3MEW	0.5	20	416	3160	6.3x6
330	16	337ULR016MFF	0.5	13	1056	4300	8x8
330	16	337ULR016MGU	0.5	10	1056	6100	10x12.5
330	25	337ULR025MGU	0.5	45	1650	2700	10x12.5
390	2.5	397ULR2R5MEW	0.43	15	280	3400	6.3x6
390	6.3	397ULR6R3MFF	0.43	8	492	5700	8x8
390	10	397ULR010MFF	0.43	11	780	5000	8x8
390	10	397ULR010MFH	0.43	9	780	6100	8x11.5
470	2.5	477ULR2R5MDK	0.35	7	280	4180	5x9
470	6.3	477ULR6R3MFH	0.35	7	592	6100	8x11.5
470	6.3	477ULR6R3MEF	0.35	8	592	4700	6.3x8
470	6.3	477ULR6R3MFF	0.35	8	593	5700	8x8
470	10	477ULR010MFF	0.35	11	940	5000	8x8
470	10	477ULR010MGH	0.35	9	940	5650	8x11.5
470	10	477ULR010MGU	0.35	8	940	6100	10x12.5
470	16	477ULR016MGU	0.35	10	1504	6100	10x12.5
470	16	477ULR016MFH	0.35	11	1504	5100	8x11.5
560	2.5	567ULR2R5MFF	0.3	7	280	4000	6.3x8
560	2.5	567ULR2R5MDF	0.3	7	280	4180	5x8
560	2.5	567ULR2R5MDK	0.3	7	280	4180	5x9
560	2.5	567ULR2R5MEF	0.3	7	280	6100	8x8
560	4	567ULR4R0MEF	0.3	7	448	5600	6.3x8
560	4	567ULR4R0MFH	0.3	7	448	6100	8x11.5
560	4	567ULR4R0MFF	0.3	7	448	6100	8x8
560	6.3	567ULR6R3MEF	0.3	8	706	4700	6.3x8
560	6.3	567ULR6R3MFF	0.3	8	706	5700	8x8
560	10	567ULR010MFF	0.3	9	1120	5600	8x8
680	4	687ULR4R0MFH	0.24	7	544	6100	8x11.5

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+105°C 2000 hour Low ESR

Capacitance (μF)	WVDC	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum ESR (mΩ) 100 kHz, +20°C	Leakage Current (μA)	Maximum RMS Ripple Current (mA) 100 kHz, +105°C	Dims DxL (mm)
680	4	687ULR4R0MFF	0.24	7	544	6100	8x8
680	6.3	687ULR6R3MFH	0.24	7	857	6100	8x11.5
680	6.3	687ULR6R3MGU	0.24	7	857	6640	10x12.5
680	10	687ULR010MFH	0.24	10	1360	5800	8x11.5
680	10	687ULR010MGU	0.24	8	1360	6100	10x12.5
680	16	687ULR016MGU	0.24	10	2176	6100	10x12.5
820	2.5	827ULR2R5MEF	0.2	7	410	5600	6.3x8
820	2.5	827ULR2R5MFF	0.2	7	410	6100	8x8
820	2.5	827ULR2R5MFH	0.2	7	410	6100	8x11.5
820	4	827ULR4R0MFF	0.2	7	656	6100	8x8
820	4	827ULR4R0MFH	0.2	7	656	6100	8x11.5
820	6.3	827ULR6R3MFF	0.2	7	1033	6100	8x8
820	6.3	827ULR6R3MFH	0.2	7	1033	6100	8x11.5
820	6.3	827ULR6R3MGH	0.2	7	1033	6640	10x12.5
820	10	827ULR010MFH	0.2	8	1640	6100	8x11.5
820	16	827ULR016MGU	0.2	10	2624	6100	10x12.5
1000	2.5	108ULR2R5MFH	0.17	7	500	6100	8x11.5
1000	4	108ULR4R0MFF	0.17	7	800	6100	8x8
1000	4	108ULR4R0MGU	0.17	7	800	6640	10x12.5
1000	6.3	108ULR6R3MFH	0.17	7	1260	6100	8x11.5
1000	16	108ULR016MGU	0.17	10	3200	6100	10x12.5
1200	4	128ULR4R0MFF	0.14	7	960	6100	8x8
1200	6.3	128ULR6R3MFH	0.14	7	1512	6100	8x11.5
1200	10	128ULR010MEF	0.14	8	2400	6200	10x12.5
1500	2.5	158ULR2R5MFH	0.11	7	750	6100	8x11.5
1500	2.5	158ULR2R5MGU	0.11	7	750	6100	10x12.5
1500	6.3	158ULR6R3MGU	0.11	10	1890	5560	10x12.5
2700	2.5	278ULR2R5MGU	0.06	8	1350	5660	10x12.5
2700	4	278ULR4R0MGU	0.06	8	2160	6900	10x12.5