

# Type UNL, DC Link and Filter Capacitors

## High Capacitance, High Current, Board Mount



Constructed using a low-loss polypropylene film, the UNL series offers high ripple current capabilities and high capacitance values making them ideal for electrolytic bank replacement and high ripple current applications.

### Highlights

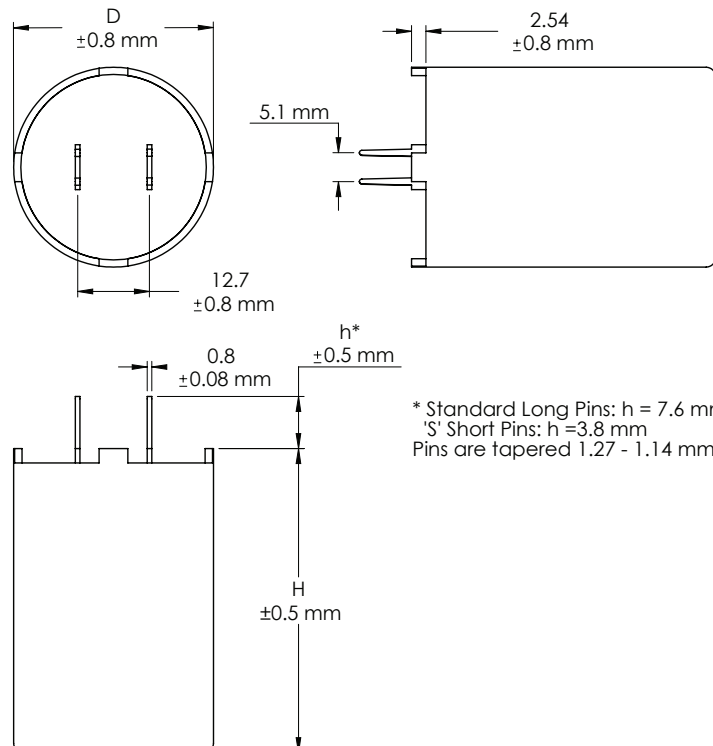
#### Advantages over Electrolytics

- Exceptionally low ESR
- Up to 10 times the ripple current
- Non-polar
- Higher voltage ratings
- Dry construction - no electrolyte
- Improved reliability

### Specifications

Capacitance Range	4.7 to 100 $\mu$ F
Capacitance Tolerance	$\pm$ 10% (K) standard
Rated Voltage	400 to 1500 Vdc
Operating Temperature Range	-55 $^{\circ}$ C to 105 $^{\circ}$ C* *Full rated voltage at 85 $^{\circ}$ C - derate linearly to 50% rated at 105 $^{\circ}$ C
Maximum rms Current	Check tables for values
Test Voltage between Terminals @ 25 $^{\circ}$ C	125% rated DC voltage for 60 s
Test Voltage between Terminals & Case @ 25 $^{\circ}$ C	3 kVac @ 50/60 Hz for 60 s
Life Test	2,000 h @ 85 $^{\circ}$ C, 125% rated voltage
Life Expectancy	60,000 h @ 70 $^{\circ}$ C, rated voltage
<b>RoHS Compliant</b>	

### Dimensions



### Construction Details

Case Material	Plastic UL94V-0
Resin Material	Dry Resin UL94V-0
Terminal Material	Tin Plated Brass

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### Part Numbering System

UNL	7	W20	K	S	-F
Type	Voltage	Capacitance	Tolerance	Leads	RoHS
UNL	4 = 400 Vdc	W80 = 80 $\mu$ F	K = $\pm$ 10%	S = Short Pins	Compliant
	5 = 500Vdc	W100 = 100 $\mu$ F		Blank = Long Pins	
	6 = 600 Vdc	W30 = 30 $\mu$ F			
	7 = 750 Vdc	W50 = 50 $\mu$ F			
	8 = 800 Vdc	W40 = 40 $\mu$ F			
	9 = 900 Vdc	W13P5 = 13.5 $\mu$ F			
	10 = 1000 Vdc	W10 = 10 $\mu$ F			
	12 = 1200 Vdc	W7P5 = 7.5 $\mu$ F			
	15 = 1500 Vdc	W4P7 = 4.7 $\mu$ F			

### Ratings

**NOTE:** Other ratings, sizes and performance specifications are available. Contact us.

Catalog Part Number*	Cap ( $\mu$ F)	Rated Voltage (Vdc)	Dia. D (mm)	Height H (mm)	Typical ESR @ 100 kHz (m $\Omega$ )	dV/dt (V/ $\mu$ s)	Peak Current (A)	Ripple Current @ 100 kHz		
								25 °C (Arms)	50 °C (Arms)	75 °C (Arms)
UNL4W30K-F	30.0	400	35	53.7	6.0	30	900	24.2	19.4	14.6
UNL4W80K-F	80.0	400	50	63	5.0	25	2000	35.0	28.0	14.3
UNL5W35K-F	35.0	500	35	53.7	8.0	26	910	22.0	18.2	13.0
UNL5W100K-F	100.0	500	50	63	6.0	22	2200	31.8	25.4	13.2
UNL6W30K-F	30.0	600	35	53.7	9.0	30	900	20.7	17.0	12.0
UNL6W80K-F	80.0	600	50	63	6.5	25	2000	30.5	24.4	12.6
UNL7W20K-F	20.0	750	35	53.7	10.0	37	740	19.0	16.0	9.9
UNL7W50K-F	50.0	750	50	63	7.0	30	1500	29.4	23.5	12.0
UNL8W15K-F	15.0	800	35	53.7	10.0	42	630	18.8	15.0	9.8
UNL8W40K-F	40.0	800	50	63	7.5	35	1400	28.4	22.8	11.7
UNL9W13P5K-F	13.5	900	35	53.7	10.5	43	580	18.0	14.5	9.6
UNL9W35K-F	35.0	900	50	63	8.0	36	1260	27.5	22.0	11.3
UNL10W10K-F	10.0	1000	35	53.7	12.0	50	500	17.5	13.7	9.0
UNL10W25K-F	25.0	1000	50	63	8.5	40	1000	26.7	21.4	11.0
UNL12W7P5K-F	7.5	1200	35	53.7	13.5	60	450	16.0	12.0	8.4
UNL12W20K-F	20.0	1200	50	63	9.0	50	1000	26.0	20.7	10.7
UNL15W4P7K-F	4.7	1500	35	53.7	15.0	72	338	15.0	11.5	7.8
UNL15W13K-F	13.0	1500	50	63	10.0	60	780	24.6	19.7	10.1

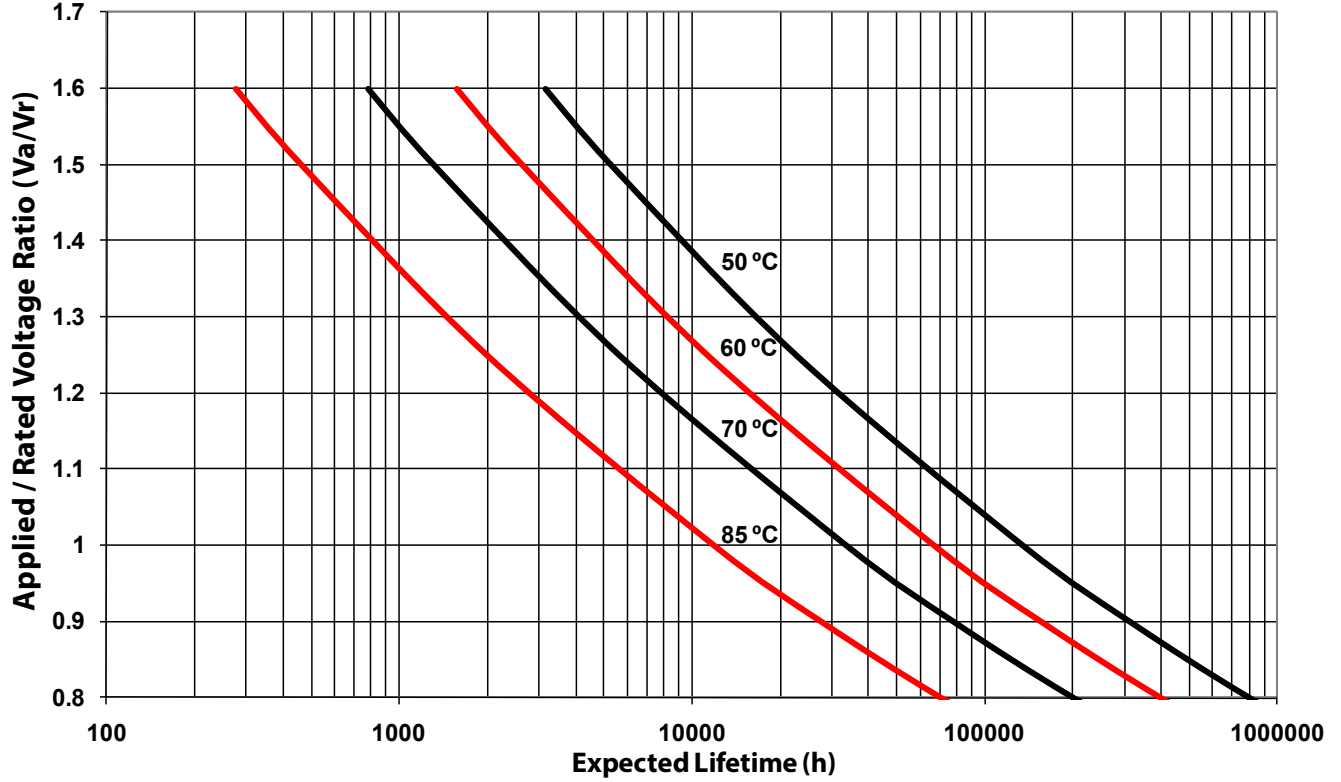
\*Add 'S' after 'K' for short pins

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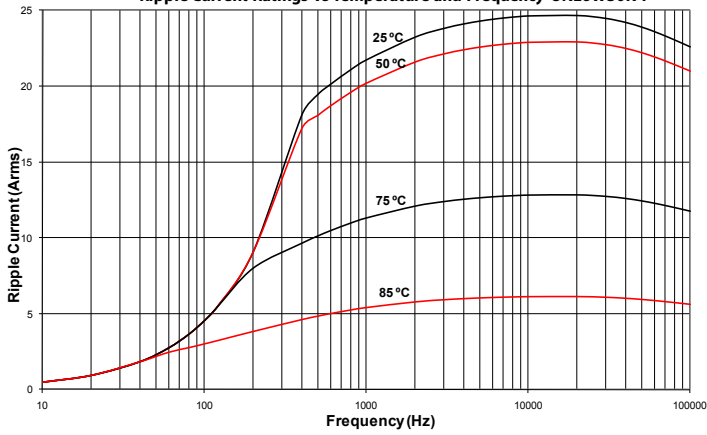
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## Typical Performance Curves

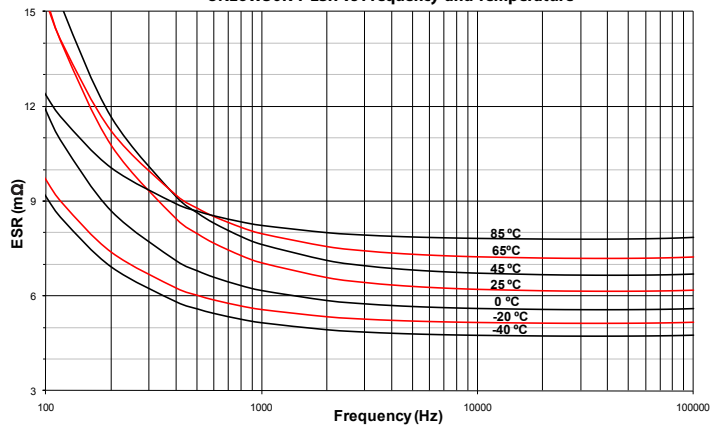
### Expected Lifetime vs Core Temperature and Applied DC Voltage



### Ripple Current Ratings vs Temperature and Frequency UNL6W30K-F



### UNL6W30K-F ESR vs Frequency and Temperature



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