

Type 381EL 105 °C Ultra-Long Life Snap-In, Aluminum

More than 100,000 Hours Operation at 65 °C and Rated 105 °C Ripple



The new 381EL extends expected life capability to 15 years or more in typical applications. And that's with the 105 °C rated ripple current applied. With 3.5 times the life of our long-life Type 381LX, the Type 381EL is the choice for hot applications like industrial power supplies, inverter lighting systems and motor drives.

Highlights

- High value extended life.
- Withstands 7000 hours at 105 °C with rated ripple current.
- Expected life more than 100,000 hours at 65 °C with rated ripple.
- Rated voltage to 450 Vdc.
- Made in USA.
- 50% more ripple current than 381L.

Specifications

Operating Temperature:

-40 °C to + 105 °C up to 300 V, -25 °C to 105 °C ≥ 315 V

Rated Voltage:

160 to 450 Vdc

Capacitance:

39 µF to 2,200 µF $\pm 20\%$

Leakage Current:

$\leq 3 \sqrt{CV}$ µA, at 5 minutes

Ripple Current Multipliers:

Ambient Temperature

45 °C	60 °C	70 °C	85 °C	105 °C
2.35	2.20	2.00	1.55	1.00

Frequency

50Hz	60 Hz	120 Hz	500 Hz	1 kHz	10 kHz & up
0.75	0.80	1.00	1.20	1.25	1.40

EIA Ripple Life:

20,000 h at 85 °C per EIA IS-749 with 105 °C ripple current.

Δ Capacitance $\pm 20\%$

ESR $\leq 200\%$ of limit

DCL 100% of limit

Load Life Test:

7000 h at full load at 105 °C

Δ Capacitance $\pm 10\%$

ESR $\leq 200\%$ of limit

DCL 100% of limit

Shelf Life:

1000 h at 105 °C

Δ Capacitance $\pm 20\%$

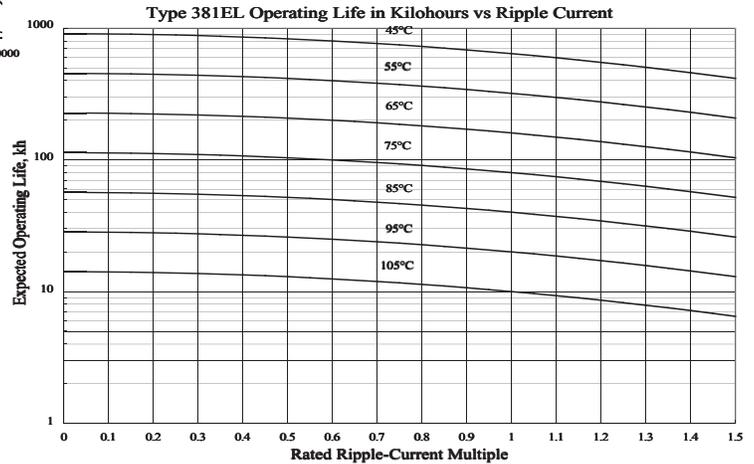
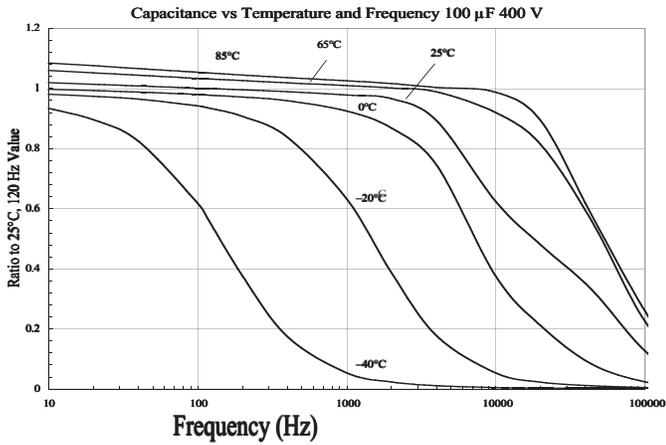
ESR 200% of limit

DCL 100% of limit

Vibration:

10 to 55 Hz, 0.06" and 10 g max, 2 h each plane

Type 381EL 105 °C Ultra-Long Life Snap-In, Aluminum



Ratings

Cap. (μF)	Catalog Part Number	DF Max 120Hz	ESR Max @ 25° C		Ripple Amps @ 105 °C		Nominal Size D x L (mm)
			120 Hz (Ω)	20 kHz (Ω)	120 Hz (A)	20 kHz (A)	
160 Vdc (200 Vdc Surge)							
270	381EL271M160H012	0.12	0.66	0.30	1.10	1.54	22 x 25
330	381EL331M160H022	0.12	0.54	0.24	1.20	1.68	22 x 30
390	381EL391M160H022	0.12	0.45	0.20	1.30	1.82	22 x 30
390	381EL391M160J012	0.12	0.45	0.20	1.30	1.82	25 x 25
470	381EL471M160H032	0.12	0.38	0.17	1.40	1.96	22 x 35
470	381EL471M160J022	0.12	0.38	0.17	1.40	1.96	25 x 30
560	381EL561M160H042	0.12	0.32	0.14	1.50	2.10	22 x 40
560	381EL561M160J022	0.12	0.32	0.14	1.50	2.10	25 x 30
560	381EL561M160K012	0.12	0.32	0.14	1.50	2.10	30 x 25
680	381EL681M160H452	0.12	0.26	0.12	1.70	2.38	22 x 45
680	381EL681M160J032	0.12	0.26	0.12	1.70	2.38	25 x 35
680	381EL681M160K022	0.12	0.26	0.12	1.70	2.38	30 x 30
820	381EL821M160J042	0.12	0.22	0.10	2.00	2.80	25 x 40
820	381EL821M160K022	0.12	0.22	0.10	2.00	2.80	30 x 30
1000	381EL102M160J452	0.12	0.18	0.08	2.20	3.08	25 x 45
1000	381EL102M160K032	0.12	0.18	0.08	2.20	3.08	30 x 35
1200	381EL122M160J052	0.13	0.16	0.08	2.30	3.22	25 x 50
1200	381EL122M160K042	0.13	0.16	0.08	2.30	3.22	30 x 40
1200	381EL122M160A032	0.13	0.16	0.08	2.30	3.22	35 x 35
1500	381EL152M160K452	0.13	0.13	0.06	2.50	3.50	30 x 45
1500	381EL152M160A032	0.13	0.13	0.06	2.50	3.50	35 x 35
1800	381EL182M160K052	0.14	0.12	0.06	2.70	3.78	30 x 50
1800	381EL182M160A042	0.14	0.12	0.06	2.70	3.78	35 x 40
2200	381EL222M160A052	0.14	0.09	0.06	2.90	4.06	35 x 50
180 Vdc (225 Vdc Surge)							
220	381EL221M180H012	0.12	0.80	0.36	1.00	1.40	22 x 25
270	381EL271M180H012	0.12	0.66	0.30	1.10	1.54	22 x 25
330	381EL331M180H022	0.12	0.54	0.24	1.20	1.68	22 x 30
330	381EL331M180J012	0.12	0.54	0.24	1.20	1.68	25 x 25
390	381EL391M180H022	0.12	0.45	0.20	1.30	1.82	22 x 30
390	381EL391M180J012	0.12	0.45	0.20	1.30	1.82	25 x 25
470	381EL471M180H032	0.12	0.38	0.17	1.40	1.96	22 x 35
470	381EL471M180J022	0.12	0.38	0.17	1.40	1.96	25 x 30
470	381EL471M180K012	0.12	0.38	0.17	1.40	1.96	30 x 25
560	381EL561M180H042	0.12	0.32	0.14	1.50	2.10	22 x 40
560	381EL561M180J032	0.12	0.32	0.14	1.50	2.10	25 x 35
560	381EL561M180K012	0.12	0.32	0.14	1.50	2.10	30 x 25
680	381EL681M180H052	0.12	0.26	0.12	1.70	2.38	22 x 50
680	381EL681M180J042	0.12	0.26	0.12	1.70	2.38	25 x 40
680	381EL681M180K022	0.12	0.26	0.12	1.70	2.38	30 x 30
820	381EL821M180J452	0.12	0.22	0.10	2.00	2.80	25 x 45
820	381EL821M180K032	0.13	0.23	0.11	2.00	2.80	30 x 35
820	381EL821M180A022	0.13	0.23	0.11	2.00	2.80	35 x 30
1000	381EL102M180K042	0.13	0.19	0.10	2.20	3.08	30 x 40
1000	381EL102M180A022	0.13	0.19	0.10	2.20	3.08	35 x 30
1200	381EL122M180K452	0.13	0.16	0.08	2.30	3.22	30 x 45
1200	381EL122M180A032	0.14	0.17	0.09	2.30	3.22	35 x 35
1500	381EL152M180K052	0.14	0.14	0.07	2.50	3.50	30 x 50
1500	381EL152M180A042	0.14	0.14	0.07	2.50	3.50	35 x 40

Type 381EL 105 °C Ultra-Long Life Snap-In, Aluminum

Cap. (µF)	Catalog Part Number	DF Max 120Hz	ESR Max @ 25° C		Ripple Amps @ 105 °C		Nominal Size D x L (mm)
			120 Hz (Ω)	20 kHz (Ω)	120 Hz (A)	20 kHz (A)	
2200	381EL222M180A052	0.14	0.094	0.067	2.9	4.06	35 x 50
200 Vdc (250 Vdc Surge)							
220	381EL221M200H012	0.12	0.80	0.36	1.00	1.40	22 x 25
270	381EL271M200H022	0.12	0.66	0.30	1.10	1.54	22 x 30
270	381EL271M200J012	0.12	0.66	0.30	1.10	1.54	25 x 25
330	381EL331M200H022	0.12	0.54	0.24	1.20	1.68	22 x 30
330	381EL331M200J012	0.12	0.54	0.24	1.20	1.68	25 x 25
390	381EL391M200H032	0.12	0.45	0.20	1.30	1.82	22 x 35
390	381EL391M200J022	0.12	0.45	0.20	1.30	1.82	25 x 30
390	381EL391M200K012	0.12	0.45	0.20	1.30	1.82	30 x 25
470	381EL471M200H042	0.12	0.38	0.17	1.40	1.96	22 x 40
470	381EL471M200J032	0.12	0.38	0.17	1.40	1.96	25 x 35
470	381EL471M200K022	0.12	0.38	0.17	1.40	1.96	30 x 30
560	381EL561M200H452	0.12	0.32	0.14	1.50	2.10	22 x 45
560	381EL561M200J032	0.12	0.32	0.14	1.50	2.10	25 x 35
560	381EL561M200K022	0.12	0.32	0.14	1.50	2.10	30 x 30
680	381EL681M200J042	0.12	0.26	0.12	1.70	2.38	25 x 40
680	381EL681M200K032	0.12	0.26	0.12	1.70	2.38	30 x 35
820	381EL821M200J052	0.12	0.22	0.10	2.00	2.80	25 x 50
820	381EL821M200K042	0.12	0.22	0.10	2.00	2.80	30 x 40
820	381EL821M200A022	0.12	0.22	0.10	2.00	2.80	35 x 30
1000	381EL102M200K452	0.12	0.18	0.09	2.20	3.08	30 x 45
1000	381EL102M200A032	0.12	0.18	0.09	2.20	3.08	35 x 35
1200	381EL122M200K052	0.13	0.16	0.08	2.30	3.22	30 x 50
1200	381EL122M200A042	0.13	0.16	0.08	2.30	3.22	35 x 40
1500	381EL152M200A052	0.13	0.13	0.06	2.50	3.50	35 x 50
250 Vdc (300 Vdc Surge)							
180	381EL181M250H022	0.1	0.82	0.41	0.90	1.26	22 x 30
180	381EL181M250J012	0.1	0.82	0.41	0.90	1.26	25 x 25
220	381EL221M250H022	0.1	0.67	0.34	1.00	1.40	22 x 30
220	381EL221M250J012	0.1	0.67	0.34	1.00	1.40	25 x 25
270	381EL271M250H032	0.1	0.55	0.27	1.10	1.54	22 x 35
270	381EL271M250J022	0.1	0.55	0.27	1.10	1.54	25 x 30
270	381EL271M250K012	0.1	0.55	0.27	1.10	1.54	30 x 25
330	381EL331M250H042	0.1	0.45	0.22	1.20	1.68	22 x 40
330	381EL331M250J032	0.1	0.45	0.22	1.20	1.68	25 x 35
330	381EL331M250K012	0.1	0.45	0.22	1.20	1.68	30 x 25
390	381EL391M250H452	0.1	0.38	0.19	1.30	1.82	22 x 45
390	381EL391M250J032	0.1	0.38	0.19	1.30	1.82	25 x 35
390	381EL391M250K022	0.1	0.38	0.19	1.30	1.82	30 x 30
470	381EL471M250J452	0.1	0.31	0.16	1.40	1.96	25 x 45
470	381EL471M250K032	0.1	0.31	0.16	1.40	1.96	30 x 35
470	381EL471M250A022	0.1	0.31	0.16	1.40	1.96	35 x 30
560	381EL561M250J052	0.1	0.26	0.13	1.50	2.10	25 x 50
560	381EL561M250K032	0.1	0.26	0.13	1.50	2.10	30 x 35
560	381EL561M250A022	0.1	0.26	0.13	1.50	2.10	35 x 30

Cap. (µF)	Catalog Part Number	DF Max 120Hz	ESR Max @ 25° C		Ripple Amps @ 105 °C		Nominal Size D x L (mm)
			120 Hz (Ω)	20 kHz (Ω)	120 Hz (A)	20 kHz (A)	
680	381EL681M250A032	0.1	0.22	0.12	1.70	2.38	35 x 35
820	381EL821M250K052	0.1	0.18	0.10	2.00	2.80	30 x 50
820	381EL821M250A042	0.1	0.18	0.10	2.00	2.80	35 x 40
1000	381EL102M250A452	0.12	0.18	0.10	2.20	3.08	35 x 45
1200	381EL122M250A052	0.12	0.15	0.09	2.30	3.22	35 x 50
315 Vdc (365 Vdc Surge)							
82	381EL820M315H012	0.1	1.80	0.90	0.64	0.90	22 x 25
100	381EL101M315H022	0.1	1.47	0.74	0.69	0.97	22 x 30
120	381EL121M315H022	0.1	1.23	0.61	0.75	1.05	22 x 30
120	381EL121M315J012	0.1	1.23	0.61	0.75	1.05	25 x 25
150	381EL151M315H032	0.1	0.98	0.49	0.82	1.15	22 x 35
150	381EL151M315J022	0.1	0.98	0.49	0.82	1.15	25 x 30
150	381EL151M315K012	0.1	0.98	0.49	0.82	1.15	30 x 25
180	381EL181M315H042	0.1	0.82	0.41	0.90	1.26	22 x 40
180	381EL181M315J032	0.1	0.82	0.41	0.90	1.26	25 x 35
180	381EL181M315K012	0.1	0.82	0.41	0.90	1.26	30 x 25
220	381EL221M315H452	0.11	0.74	0.37	1.00	1.40	22 x 45
220	381EL221M315J042	0.11	0.74	0.37	1.00	1.40	25 x 40
220	381EL221M315K022	0.11	0.74	0.37	1.00	1.40	30 x 30
270	381EL271M315J452	0.11	0.60	0.30	1.10	1.54	25 x 45
270	381EL271M315K032	0.11	0.60	0.30	1.10	1.54	30 x 35
270	381EL271M315A022	0.11	0.60	0.30	1.10	1.54	35 x 30
330	381EL331M315J052	0.11	0.49	0.25	1.20	1.68	25 x 50
330	381EL331M315K042	0.11	0.49	0.25	1.20	1.68	30 x 40
330	381EL331M315A022	0.11	0.49	0.25	1.20	1.68	35 x 30
390	381EL391M315K452	0.12	0.45	0.23	1.30	1.82	30 x 45
390	381EL391M315A032	0.12	0.45	0.23	1.30	1.82	35 x 35
470	381EL471M315K052	0.12	0.38	0.19	1.40	1.96	30 x 50
470	381EL471M315A042	0.12	0.38	0.19	1.40	1.96	35 x 40
560	381EL561M315A452	0.12	0.32	0.16	1.50	2.10	35 x 45
680	381EL681M315A052	0.12	0.26	0.14	1.70	2.38	35 x 50
350 Vdc (400 Vdc Surge)							
82	381EL820M350H012	0.1	1.80	0.90	0.64	0.90	22 x 25
100	381EL101M350H022	0.1	1.47	0.74	0.69	0.97	22 x 30
100	381EL101M350J012	0.1	1.47	0.74	0.69	0.97	25 x 25
120	381EL121M350H032	0.1	1.23	0.61	0.75	1.05	22 x 35
120	381EL121M350J022	0.1	1.23	0.61	0.75	1.05	25 x 30
150	381EL151M350H042	0.1	0.98	0.49	0.82	1.15	22 x 40
150	381EL151M350J022	0.1	0.98	0.49	0.82	1.15	25 x 30
150	381EL151M350K012	0.1	0.98	0.49	0.82	1.15	30 x 25
180	381EL181M350H452	0.1	0.82	0.41	0.90	1.26	22 x 45
180	381EL181M350J032	0.1	0.82	0.41	0.90	1.26	25 x 35
180	381EL181M350K022	0.1	0.82	0.41	0.90	1.26	30 x 30
220	381EL221M350H052	0.11	0.74	0.37	1.00	1.40	22 x 50
220	381EL221M350J042	0.11	0.74	0.37	1.00	1.40	25 x 40
220	381EL221M350K022	0.11	0.74	0.37	1.00	1.40	30 x 30

Type 381EL 105 °C Ultra-Long Life Snap-In, Aluminum

Cap. (µF)	Catalog Part Number	DF Max 120Hz	ESR Max @ 25° C		Ripple Amps @ 105 °C		Nominal Size D x L (mm)
			120 Hz (Ω)	20 kHz (Ω)	120 Hz (A)	20 kHz (A)	
270	381EL271M350J052	0.11	0.60	0.30	1.10	1.54	25 x 50
270	381EL271M350K032	0.11	0.60	0.30	1.10	1.54	30 x 35
270	381EL271M350A022	0.11	0.60	0.30	1.10	1.54	35 x 30
330	381EL331M350K452	0.11	0.49	0.25	1.20	1.68	30 x 45
330	381EL331M350A032	0.11	0.49	0.25	1.20	1.68	35 x 35
390	381EL391M350K052	0.12	0.45	0.23	1.30	1.82	30 x 50
390	381EL391M350A042	0.12	0.45	0.23	1.30	1.82	35 x 40
470	381EL471M350A042	0.12	0.38	0.19	1.40	1.96	35 x 40
560	381EL561M350A052	0.12	0.32	0.16	1.50	2.10	35 x 50
400 Vdc (450 Vdc Surge)							
56	381EL560M400H012	0.1	2.63	0.92	0.51	0.71	22 x 25
68	381EL680M400H022	0.1	2.17	0.76	0.56	0.78	22 x 30
68	381EL680M400J012	0.1	2.17	0.76	0.56	0.78	25 x 25
82	381EL820M400H032	0.1	1.80	0.63	0.64	0.90	22 x 35
82	381EL820M400J012	0.1	1.80	0.63	0.64	0.90	25 x 25
100	381EL101M400H032	0.1	1.47	0.52	0.69	0.97	22 x 35
100	381EL101M400J022	0.1	1.47	0.52	0.69	0.97	25 x 30
120	381EL121M400H042	0.1	1.23	0.43	0.75	1.05	22 x 40
120	381EL121M400J032	0.1	1.23	0.43	0.75	1.05	25 x 35
120	381EL121M400K012	0.1	1.23	0.43	0.75	1.05	30 x 25
150	381EL151M400H052	0.1	0.98	0.34	0.82	1.15	22 x 50
150	381EL151M400J042	0.1	0.98	0.34	0.82	1.15	25 x 40
150	381EL151M400K022	0.1	0.98	0.34	0.82	1.15	30 x 30
180	381EL181M400J452	0.1	0.82	0.29	0.90	1.26	25 x 45
180	381EL181M400K032	0.1	0.82	0.29	0.90	1.26	30 x 35
180	381EL181M400A022	0.1	0.82	0.29	0.90	1.26	35 x 25
220	381EL221M400J052	0.1	0.67	0.23	1.00	1.40	25 x 50
220	381EL221M400K042	0.1	0.67	0.23	1.00	1.40	30 x 40
220	381EL221M400A022	0.1	0.67	0.23	1.00	1.40	35 x 30
270	381EL271M400K452	0.1	0.55	0.19	1.10	1.54	30 x 45

Cap. (µF)	Catalog Part Number	DF Max 120Hz	ESR Max @ 25° C		Ripple Amps @ 105 °C		Nominal Size D x L (mm)
			120 Hz (Ω)	20 kHz (Ω)	120 Hz (A)	20 kHz (A)	
270	381EL271M400A032	0.1	0.546	0.191	1.1	1.54	35 x 35
330	381EL331M400K052	0.1	0.447	0.179	1.2	1.68	30 x 50
330	381EL331M400A042	0.1	0.447	0.179	1.2	1.68	35 x 40
390	381EL391M400A452	0.1	0.378	0.151	1.3	1.82	35 x 45
470	381EL471M400A052	0.1	0.314	0.125	1.4	1.96	35 x 50
450 Vdc (500 Vdc Surge)							
39	381EL390M450H012	0.1	3.78	1.32	0.37	0.52	22 x 25
47	381EL470M450H022	0.1	3.14	1.10	0.40	0.56	22 x 30
56	381EL560M450H032	0.1	2.63	0.92	0.47	0.66	22 x 35
56	381EL560M450J012	0.1	2.63	0.92	0.47	0.66	25 x 25
68	381EL680M450H042	0.1	2.17	0.76	0.53	0.74	22 x 40
68	381EL680M450J022	0.1	2.17	0.76	0.53	0.74	25 x 30
82	381EL820M450H452	0.1	1.80	0.63	0.56	0.78	22 x 45
82	381EL820M450J032	0.1	1.80	0.63	0.56	0.78	25 x 35
82	381EL820M450K012	0.1	1.80	0.63	0.56	0.78	30 x 25
100	381EL101M450H052	0.1	1.47	0.52	0.64	0.90	22 x 50
100	381EL101M450J042	0.1	1.47	0.52	0.64	0.90	25 x 40
100	381EL101M450K022	0.1	1.47	0.52	0.64	0.90	30 x 30
120	381EL121M450J452	0.1	1.23	0.43	0.72	1.01	25 x 45
120	381EL121M450K022	0.1	1.23	0.43	0.72	1.01	30 x 30
150	381EL151M450J052	0.1	0.98	0.34	0.79	1.11	25 x 50
150	381EL151M450K042	0.1	0.98	0.34	0.79	1.11	30 x 40
150	381EL151M450A022	0.1	0.98	0.34	0.79	1.11	35 x 30
180	381EL181M450K452	0.1	0.82	0.29	0.87	1.22	30 x 45
180	381EL181M450A032	0.1	0.82	0.29	0.87	1.22	35 x 35
220	381EL221M450K052	0.1	0.67	0.23	1.00	1.40	30 x 50
220	381EL221M450A042	0.1	0.67	0.23	1.00	1.40	35 x 40
270	381EL271M450A452	0.1	0.55	0.19	1.19	1.67	35 x 45
330	381EL331M450A052	0.1	0.45	0.16	1.38	1.93	35 x 50