

# Type 361R 105 °C, Miniature, Industrial Grade, Radial Leaded

## High-value, High Ripple, Low ESR & ESL



Type 361R capacitors are for industrial applications from -40 °C to +105 °C. They deliver excellent ripple capability and low ESR and ESL. Also available with three mounting leads. For three leads, change Type designation from 361R to 366R.

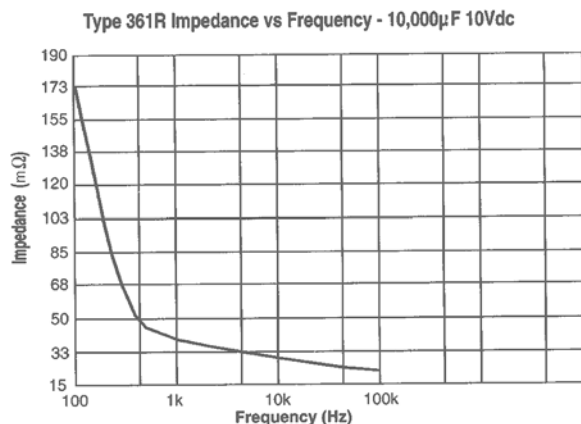
### Highlights

- Excellent Ripple Capability
- Low ESR and ESL
- High Valuers

### Specifications

Temperature Range	-40 °C to +105 °C																																														
Rated Voltage Range	6.3 to 450 Vdc																																														
Capacitance Range	7 to 18,000 µF ± 20%																																														
Leakage Current	≤0.002 CV µF +25 °C, 6.3 to 160 Vdc ≤0.02 CV µF +25 °C, 200 to 450 Vdc																																														
Ripple Current Multipliers	<p>Ambient Temperature</p> <table border="1"> <thead> <tr> <th>45 °C</th> <th>55 °C</th> <th>65 °C</th> <th>75 °C</th> <th>85 °C</th> <th>95 °C</th> <th>105 °C</th> </tr> </thead> <tbody> <tr> <td>2.00</td> <td>1.60</td> <td>1.40</td> <td>1.25</td> <td>1.00</td> <td>0.79</td> <td>0.5</td> </tr> </tbody> </table> <p>Frequency</p> <table border="1"> <thead> <tr> <th></th> <th>50 Hz</th> <th>60 Hz</th> <th>120 Hz</th> <th>360 Hz</th> <th>1 kHz</th> <th>5 kHz</th> <th>10 kHz &amp; up</th> </tr> </thead> <tbody> <tr> <td><b>6.3 &amp; 10 V</b></td> <td>0.91</td> <td>0.93</td> <td>1.00</td> <td>1.06</td> <td>1.08</td> <td>1.09</td> <td>1.09</td> </tr> <tr> <td><b>16 to 25 V</b></td> <td>0.85</td> <td>0.88</td> <td>1.00</td> <td>1.12</td> <td>1.18</td> <td>1.21</td> <td>1.22</td> </tr> <tr> <td><b>35 V &amp; up</b></td> <td>0.77</td> <td>0.82</td> <td>1.00</td> <td>1.21</td> <td>1.32</td> <td>1.37</td> <td>1.38</td> </tr> </tbody> </table>	45 °C	55 °C	65 °C	75 °C	85 °C	95 °C	105 °C	2.00	1.60	1.40	1.25	1.00	0.79	0.5		50 Hz	60 Hz	120 Hz	360 Hz	1 kHz	5 kHz	10 kHz & up	<b>6.3 &amp; 10 V</b>	0.91	0.93	1.00	1.06	1.08	1.09	1.09	<b>16 to 25 V</b>	0.85	0.88	1.00	1.12	1.18	1.21	1.22	<b>35 V &amp; up</b>	0.77	0.82	1.00	1.21	1.32	1.37	1.38
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Load Life RoHS Non-RoHS	2000 h at full load at 105 °C 4000 h at full load at 105 °C Δ Capacitance ±15% ESR 175% of limit DCL 100% of limit																																														
Shelf Life Test	1,000 h @ 105 °C Δ Capacitance ±15% ESR 150% of limit DCL 200% of limit																																														
Vibration	10 to 55 Hz, 0.06" and 10 g, 2 h ea of 3 planes																																														

### Typical Curve



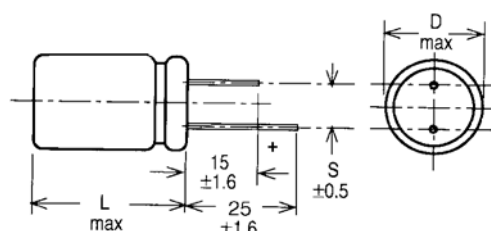
# Type 361R 105 °C, Miniature, Industrial Grade, Radial Ledged

High-value, High Ripple, Low ESR & ESL

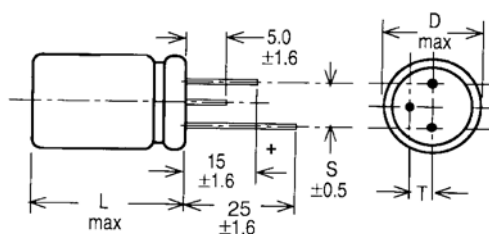
## Part Numbering System

<b>NR</b>	<b>361R</b>	<b>183</b>	<b>M</b>	<b>6R3</b>	<b>LV</b>	<b>2</b>	<b>E</b>
<b>RoHS</b>	<b>Type</b>	<b>Capacitance</b>	<b>Tolerance</b>	<b>Voltage</b>	<b>Case Code</b>	<b>Insulation</b>	<b>Epoxy End Seal</b>
<b>Blank</b> = Compliant <b>NR</b> = Non Compliant (exceeds Pb)	361R or 366R	<b>100</b> = 10 $\mu$ F <b>101</b> = 100 $\mu$ F <b>183</b> = 18000 $\mu$ F	<b>M</b> = $\pm 20\%$ <b>U</b> = $-10 + 75\%$	<b>6R3</b> = 6.3 Vdc <b>063</b> = 63 Vdc		<b>0</b> = None <b>2</b> = PVC	<b>(blank)</b> = no epoxy <b>E</b> = Epoxy

## Outline Drawing



Type 361R - Two Leads



Type 366R - Three Leads

## Case Dimensions

Case Code	Nominal D x L (mm)	Insulated D x L (mm)	Insulated Epoxy Seal (mm)	S ± 0.6 (mm)	T ± 0.5 (mm)	Lead Diam. mm	AWG	Weight g
<b>EG</b>	12.5 x 20.0	13.0 x 21.5	13.0 x 23.0	5.0	2.5	0.81	20	3.8
<b>EK</b>	12.5 x 25.0	13.0 x 26.5	13.0 x 29.0	5.0	2.5	0.81	20	4.5
<b>EM</b>	12.5 x 26.5	13.0 x 28.0	13.0 x 29.5	5.0	2.5	0.81	20	4.7
<b>EN</b>	12.5 x 33.5	13.0 x 34.2	13.0 x 36.0	5.0	2.5	0.81	20	5.8
<b>ER</b>	12.5 x 42.5	13.0 x 43.7	13.0 x 45.5	5.0	2.5	0.81	20	7.3
<b>FK</b>	16.0 x 25.0	16.5 x 26.2	16.5 x 27.9	7.5	3.75	0.81	20	7.2
<b>FF</b>	16.0 x 32.0	16.5 x 33.5	16.5 x 36.0	7.5	3.75	0.81	20	9.4
<b>FN</b>	16.0 x 33.5	16.5 x 34.2	16.5 x 36.0	7.5	3.75	0.81	20	9.5
<b>FQ</b>	16.0 x 36.0	16.5 x 37.5	16.5 x 40.0	7.5	3.75	0.81	20	10.6
<b>FV</b>	16.0 x 40.0	16.5 x 41.7	16.5 x 42.4	7.5	3.75	0.81	20	11.9
<b>LQ</b>	18.0 x 36.0	18.5 x 37.5	18.5 x 40.0	7.5	3.75	0.81	20	13.4
<b>LV</b>	18.0 x 40.0	18.5 x 42.0	18.5 x 43.0	7.5	3.75	0.81	20	14.9

L incl. Sleeve & Epoxy Seal - Millimeters

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### Ratings

Cap. (µF)	Catalog Part Number	ESR Max. 120 Hz 25°C (Ω)	Ripple A 120 Hz 85°C (A)	Nom Size D X L (mm)
<b>6.3 Vdc (8 Vdc Surge)</b>				
2200	361R222M6R3EG2	0.205	1.130	12.5 x 20
3300	361R332M6R3EK2	0.140	1.440	12.5 x 25
3900	361R392M6R3EM2	0.131	1.380	12.5 x 26.5
4700	361R472M6R3EN2	0.098	1.840	12.5 x 33.5
6800	361R682M6R3ER2	0.075	2.160	12.5 x 42.5
6800	361R682M6R3FK2	0.084	2.000	16 x 25
10000	361R103M6R3FF2	0.068	2.330	16 x 32
12000	361R123M6R3FQ2	0.062	2.550	16 x 36
12000	361R123M6R3FV2	0.058	2.750	16 x 40
15000	361R153M6R3LQ2	0.053	2.990	18 x 36
18000	361R183M6R3LV2	0.049	3.240	18 x 40
<b>10 Vdc (12.5 Vdc Surge)</b>				
1500	361R152M010EG2	0.210	0.947	12.5 x 20
2200	361R222M010EK2	0.158	1.330	12.5 x 25
2700	361R272M010EM2	0.144	1.420	12.5 x 26.5
3300	361R332M010EN2	0.115	1.760	12.5 x 33.5
4700	361R472M010ER2	0.083	2.250	12.5 x 42.5
4700	361R472M010FK2	0.093	2.000	16 x 25
6800	361R682M010FF2	0.073	2.440	16 x 32
8200	361R822M010FQ2	0.063	2.950	16 x 36
10000	361R103M010FV2	0.059	3.000	16 x 40
12000	361R123M010LQ2	0.056	3.050	18 x 36
15000	361R153M010LV2	0.051	3.400	18 x 40
<b>16 Vdc (20 Vdc Surge)</b>				
1000	361R102M016EG2	0.265	0.942	12.5 x 20
1800	361R182M016EK2	0.156	1.350	12.5 x 25
2200	361R222M016EM2	0.147	1.410	12.5 x 26.5
3300	361R332M016EN2	0.108	1.790	12.5 x 33.5
3300	361R332M016FK2	0.100	1.880	16 x 25
4700	361R472M016ER2	0.084	2.200	12.5 x 42.5
4700	361R472M016FF2	0.077	2.280	16 x 32
6800	361R682M016FQ2	0.066	2.670	16 x 36
6800	361R682M016FV2	0.064	2.700	16 x 40
7800	361R782M016LQ2	0.060	2.800	18 x 36
10000	361R103M016LV2	0.053	3.000	18 x 40
<b>20 Vdc (25 Vdc Surge)</b>				
1000	361R102M020EG2	0.200	0.970	12.5 x 20
1500	361R152M020EK2	0.133	1.300	12.5 x 25
2200	361R222M020EM2	0.103	1.510	12.5 x 26.5
2700	361R272M020EN2	0.084	1.840	12.5 x 33.5
3300	361R332M020FK2	0.076	2.000	16 x 25
3900	361R392M020ER2	0.065	2.320	12.5 x 42.5
4700	361R472M020FF2	0.060	2.480	16 x 32
5600	361R562M020FQ2	0.055	2.720	16 x 36
6800	361R682M020FV2	0.053	2.900	16 x 40
8200	361R822M020LQ2	0.047	3.180	18 x 36
10000	361R103M020LV2	0.044	3.280	18 x 40
<b>25 Vdc (32 Vdc Surge)</b>				
820	361R821M025EG2	0.280	0.860	12.5 x 20
1000	361R102M025EK2	0.230	1.080	12.5 x 25
1200	361R122M025EM2	0.190	1.150	12.5 x 26.5
1800	361R182M025EN2	0.128	1.550	12.5 x 33.5
2200	361R222M025FK2	0.121	1.660	16 x 25

Cap. (µF)	Catalog Part Number	ESR Max. 120 Hz 25°C (Ω)	Ripple A 120 Hz 85°C (A)	Nom Size D X L (mm)
2700	361R272M025ER2	0.096	2.000	12.5 x 42.5
3300	361R332M025FF2	0.091	2.080	16 x 32
3900	361R392M025FK2	0.081	2.360	16 x 36
4700	361R472M025FV2	0.071	2.560	16 x 40
4700	361R472M025LQ2	0.071	2.710	18 x 36
5600	361R562M025LV2	0.065	2.830	18 x 40
4700	361R472M025LQ2	0.071	2.710	18 x 36
5600	361R562M025LV2	0.065	2.830	18 x 40
<b>35 Vdc (44 Vdc Surge)</b>				
680	361R681M035EG2	0.287	0.850	12.5 x 20
1000	361R102M035EK2	0.199	1.200	12.5 x 25
1200	361R122M035EM2	0.190	1.250	12.5 x 26.5
1500	361R152M035EN2	0.133	1.570	12.5 x 33.5
1800	361R182M035FK2	0.133	1.620	16 x 25
2200	361R222M035ER2	0.106	1.900	12.5 x 42.5
2200	361R222M035FF2	0.106	2.000	16 x 32
2700	361R272M035FQ2	0.086	2.330	16 x 36
3300	361R332M035FV2	0.080	2.380	16 x 40
3300	361R332M035LQ2	0.080	2.400	18 x 36
4700	361R472M035LV2	0.064	2.700	18 x 40
<b>50 Vdc (63 Vdc Surge)</b>				
330	361R331M050EG2	0.443	0.760	12.5 x 20
470	361R471M050EK2	0.343	0.960	12.5 x 25
560	361R561M050EM2	0.266	1.050	12.5 x 26.5
820	361R821M050EN2	0.180	1.380	12.5 x 33.5
1000	361R102M050FK2	0.156	1.530	16 x 25
1200	361R122M050ER2	0.125	1.810	12.5 x 42.5
1500	361R152M050FF2	0.101	2.140	16 x 32
1800	361R182M050FQ2	0.083	2.440	16 x 36
2200	361R222M050LQ2	0.081	2.640	18 x 36
2200	361R222M050FV2	0.081	2.600	16 x 40
2700	361R272M050LV2	0.065	3.040	18 x 40
<b>63 Vdc (79 Vdc Surge)</b>				
330	361R331M063EG2	0.450	0.760	12.5 x 20
470	361R471M063EK2	0.318	0.960	12.5 x 25
470	361R471M063EM2	0.318	0.980	12.5 x 26.5
560	361R561M063EN2	0.268	1.150	12.5 x 33.5
680	361R681M063ER2	0.183	1.540	12.5 x 42.5
820	361R821M063FK2	0.220	1.310	16 x 25
1200	361R122M063FF2	0.150	1.700	16 x 32
1500	361R152M063FQ2	0.125	1.980	16 x 36
1800	361R182M063FV2	0.100	2.300	16 x 40
1800	361R182M063LQ2	0.100	2.580	18 x 36
2200	361R222M063LV2	0.083	2.700	18 x 40
<b>75 Vdc (90 Vdc Surge)</b>				
150	361R151M075EG2	1.070	0.450	12.5 x 20
220	361R221M075EK2	0.727	0.580	12.5 x 25
270	361R271M075EM2	0.600	0.650	12.5 x 26.5
390	361R391M075EN2	0.410	0.870	12.5 x 33.5
470	361R471M075FK2	0.340	1.000	16 x 25
560	361R561M075ER2	0.285	1.160	12.5 x 42.5
680	361R681M075FF2	0.235	1.320	16 x 32
820	361R821M075FQ2	0.195	1.520	16 x 36
1000	361R102M075FV2	0.160	1.660	16 x 40

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Cap. (µF)	Catalog Part Number	ESR Max. 120 Hz 25°C (Ω)	Ripple A 120 Hz 85°C (A)	Nom Size D X L (mm)
1000	361R102M075LQ2	0.160	1.700	18 x 36
1200	361R122M075LV2	0.133	1.900	18 x 40
<b>100 Vdc (125 Vdc Surge)</b>				
100	361R101M100EG2	1.650	0.355	12.5 x 20
120	361R121M100EK2	1.320	0.450	12.5 x 25
150	361R151M100EM2	1.100	0.500	12.5 x 26.5
220	361R221M100EN2	0.750	0.666	12.5 x 33.5
270	361R271M100ER2	0.610	0.750	12.5 x 42.5
330	361R331M100FK2	0.500	0.875	16 x 25
390	361R391M100FF2	0.420	1.010	16 x 32
470	361R471M100FQ2	0.350	1.150	16 x 36
470	361R471M100FV2	0.350	1.250	16 x 40
560	361R561M100LQ2	0.290	1.370	18 x 36
680	361R681M100LV2	0.240	1.570	18 x 40
<b>160 Vdc (185 Vdc Surge)</b>				
33	361R330M160EG2	5.000	0.200	12.5 x 20
47	361R470M160EK2	3.500	0.250	12.5 x 25
56	361R560M160EM2	2.950	0.280	12.5 x 26.5
82	361R820M160EN2	2.000	0.380	12.5 x 33.5
100	361R101M160ER2	1.650	0.460	12.5 x 42.5
100	361R101M160FK2	1.650	0.430	16 x 25
150	361R151M160FF2	1.100	0.580	16 x 32
180	361R181M160FQ2	0.920	0.665	16 x 36
220	361R221M160FV2	0.750	0.770	16 x 40
220	361R221M160LQ2	0.750	0.800	18 x 36
270	361R271M160LV2	0.610	0.920	18 x 40
<b>200 Vdc (225 Vdc Surge)</b>				
27	361R270M200EG2	5.900	0.175	12.5 x 20
47	361R470M200EK2	3.600	0.250	12.5 x 25
56	361R560M200EM2	3.000	0.280	12.5 x 26.5
68	361R680M200EN2	2.500	0.340	12.5 x 33.5
82	361R820M200FK2	2.000	0.390	16 x 25
100	361R101M200ER2	1.650	0.450	12.5 x 42.5
120	361R121M200FF2	1.380	0.520	16 x 32
150	361R151M200FQ2	1.100	0.600	16 x 36
220	361R221M200FV2	0.760	0.760	16 x 40
220	361R221M200LQ2	0.760	0.790	18 x 36
270	361R271M200LV2	0.620	0.910	18 x 40
<b>250 Vdc (300 Vdc Surge)</b>				
18	361R180M250EG2	9.200	0.145	12.5 x 20
27	361R270M250EK2	6.100	0.190	12.5 x 25
33	361R330M250EM2	5.000	0.215	12.5 x 26.5
47	361R470M250EN2	3.500	0.285	12.5 x 33.5
47	361R470M250FK2	3.500	0.295	16 x 25
56	361R560M250ER2	2.950	0.345	12.5 x 42.5
68	361R680M250FF2	2.420	0.390	16 x 32
82	361R820M250FQ2	2.000	0.450	16 x 36
100	361R101M250FV2	1.650	0.515	16 x 40
120	361R121M250LQ2	1.380	0.585	18 x 36
150	361R151M250LV2	1.100	0.685	18 x 40
<b>300 Vdc (365 Vdc Surge)</b>				
12	361R120M300EG2	13.80	0.120	12.5 x 20

Cap. (µF)	Catalog Part Number	ESR Max. 120 Hz 25°C (Ω)	Ripple A 120 Hz 85°C (A)	Nom Size D X L (mm)
18	361R180M300EK2	9.150	0.155	12.5 x 25
22	361R220M300EM2	7.500	0.175	12.5 x 26.5
33	361R330M300EN2	5.000	0.240	12.5 x 33.5
33	361R330M300FK2	5.000	0.245	16 x 25
47	361R470M300ER2	3.500	0.315	12.5 x 42.5
47	361R470M300FF2	3.500	0.325	16 x 32
56	361R560M300FQ2	2.950	0.375	16 x 36
68	361R680M300FV2	2.420	0.430	16 x 40
82	361R820M300LQ2	2.000	0.485	18 x 36
100	361R101M300LV2	1.650	0.555	18 x 40
<b>350 Vdc (400 Vdc Surge)</b>				
10	361R100M350EK2	16.50	0.115	12.5 x 25
15	361R150M350EM2	11.00	0.145	12.5 x 26.5
22	361R220M350EN2	7.500	0.195	12.5 x 33.5
27	361R270M350FK2	6.100	0.225	16 x 25
33	361R330M350ER2	5.000	0.265	12.5 x 42.5
<b>350 Vdc (400 Vdc Surge)</b>				
10	361R100M350EK2	16.50	0.115	12.5 x 25
15	361R150M350EM2	11.00	0.145	12.5 x 26.5
22	361R220M350EN2	7.500	0.195	12.5 x 33.5
27	361R270M350FK2	6.100	0.225	16 x 25
33	361R330M350ER2	5.000	0.265	12.5 x 42.5
39	361R390M350FF2	4.250	0.295	16 x 32
47	361R470M350FQ2	3.500	0.340	16 x 36
56	361R560M350FV2	2.950	0.385	16 x 40
68	361R680M350LQ2	2.420	0.445	18 x 36
82	361R820M350LV2	2.000	0.500	18 x 40
<b>400 Vdc (450 Vdc Surge)</b>				
8	361R080M400EK2	20.00	0.105	12.5 x 25
12	361R120M400EM2	13.80	0.125	12.5 x 26.5
18	361R180M400EN2	9.100	0.175	12.5 x 33.5
22	361R220M400FK2	7.500	0.200	16 x 25
27	361R270M400ER2	6.100	0.235	12.5 x 42.5
33	361R330M400FF2	5.000	0.275	16 x 32
39	361R390M400FQ2	4.200	0.315	16 x 36
47	361R470M400FV2	3.500	0.355	16 x 40
56	361R560M400LQ2	2.950	0.400	18 x 36
68	361R680M400LV2	2.420	0.465	18 x 40
<b>450 Vdc (500 Vdc Surge)</b>				
7	361R070M450EK2	20.00	0.100	12.5 x 25
10	361R100M450EM2	16.50	0.120	12.5 x 26.5
15	361R150M450EN2	11.00	0.165	12.5 x 33.5
18	361R180M450FK2	9.100	0.185	16 x 25
22	361R220M450ER2	7.500	0.215	12.5 x 42.5
27	361R270M450FF2	6.100	0.245	16 x 32
33	361R330M450FQ2	5.000	0.285	16 x 36
39	361R390M450FV2	4.200	0.325	16 x 40
47	361R470M450LQ2	3.500	0.365	18 x 36
56	361R560M450LV2	2.950	0.415	18 x 40

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