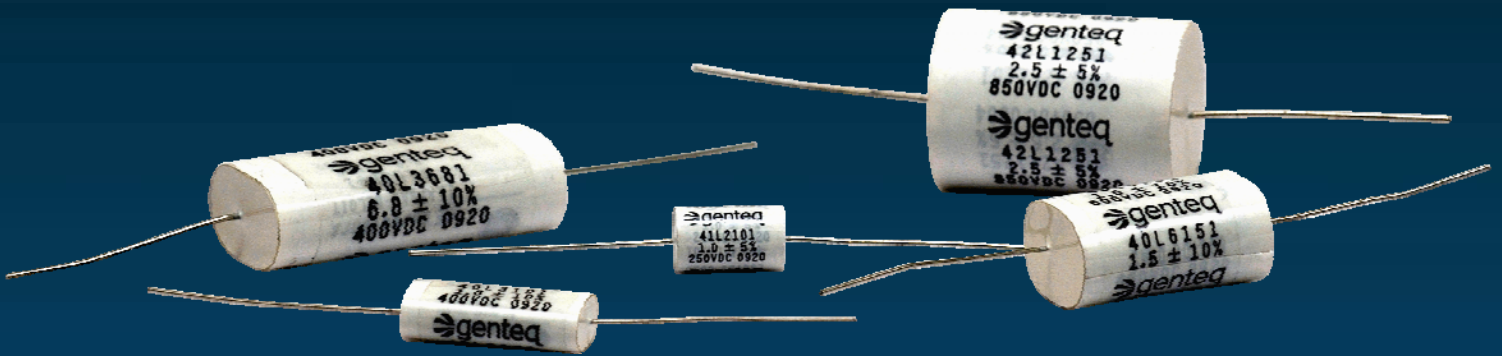




# Snubber, High Current DC, and Switching Capacitors



**Genteq Capacitors** 1946 West Cook Road, Fort Wayne, Indiana 46818 USA  
**Phone:** (260) 416-5400 **Fax:** (260) 416-5460 **Email:** capacitors@regalbeloit.com

[www.genteqcapacitors.com](http://www.genteqcapacitors.com)





# Capacitor Application Data Sheet

To ensure correct selection of a capacitor for your application, please provide the information indicated below. This sheet may be duplicated or additional copies may be obtained from RBC.

Of particular importance are the voltages and current waveforms complete with values of voltage and current over a complete cycle.

Send this data to your local RBC Sales Representative or directly to:

## Genteq Capacitors

1946 West Cook Road  
Fort Wayne, Indiana 46818 USA

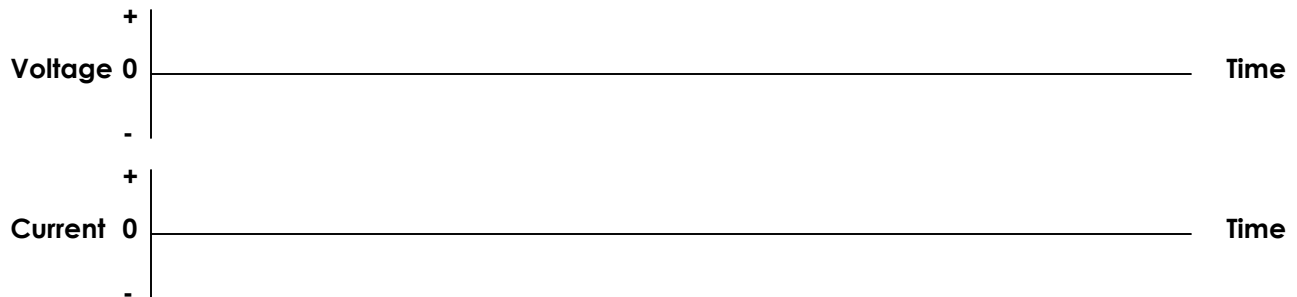
**Phone:** (260) 416-5400

**Fax:** (260) 416-5460

**Email:** capacitors@regalbeloit.com

## PRIMARY INFORMATION (Essential)

1. **Application:** \_\_\_\_\_
2. **Capacitance:** \_\_\_\_\_ **Tolerance:** \_\_\_\_\_
3. **Peak Voltage:** \_\_\_\_\_ **RMS Voltage:** \_\_\_\_\_
4. **Peak Current:** \_\_\_\_\_ **RMS Current:** \_\_\_\_\_
5. **Transient Voltage:** \_\_\_\_\_ **Duration:** \_\_\_\_\_ **Freq. Of Occurrence:** \_\_\_\_\_
6. **Frequency or Repetition Rate (Hz):** \_\_\_\_\_ **Duty Cycle:** \_\_\_\_\_
7. **Ambient Temperature:** \_\_\_\_\_ **Max.:** \_\_\_\_\_ **Min.:** \_\_\_\_\_
8. **Capacitor Charge Time:** \_\_\_\_\_ **Discharge Time:** \_\_\_\_\_
9. **Required Operating Life (Hours):** \_\_\_\_\_
10. **Waveforms:**



## SECONDARY INFORMATION (Provide as Appropriate)

11. **Physical Size Limitations:** \_\_\_\_\_
12. **Mounting Requirements:** \_\_\_\_\_
13. **Applicable Specifications:** \_\_\_\_\_
14. **Type of Cooling Available:** \_\_\_\_\_
15. **Unusual Atmospheric Conditions:** \_\_\_\_\_
16. **Other Special Requirements:** \_\_\_\_\_
17. **Number of Samples Required:** \_\_\_\_\_
18. **Potential Usage:** \_\_\_\_\_





## Snubber, High-Current DC, and Switching Capacitors

### 40L Series – Snubber & High-Current DC Capacitors

Product Specifications 02

Ratings 03

Application Data 04

### 41L Series – Switching Capacitors

Product Specifications 05

Ratings 06

### 42L Series – Snubber & High-Current DC Capacitors

Product Specifications 07

Ratings 08

Capacitor Label 09

Other Catalogs 10



The 40L Series are high-performance dry, axial-leaded capacitors **designed specifically for demanding electronic applications**. They are commonly used in input and output filters and for DC blocking in high-frequency switch-mode power supplies. The low electrical losses of the polypropylene film dielectric combined with the enhanced current carrying ability of the special "graded" metallized electrodes results in outstanding performance. If there are **any questions** regarding the correct application of these products, please **contact your RBC sales representative**.

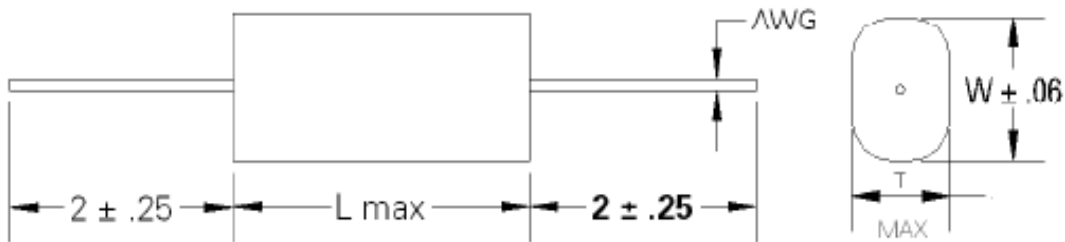
### SPECIFICATIONS:

<b>Available Capacitance Range:</b>	0.47 to 6.8 $\mu$ F
<b>Capacitance Tolerance:</b>	$\pm$ 10%
<b>Capacitance Variation with Temperature:</b>	$\pm$ 3% from -55°C to +105°C
<b>Rated Voltage:</b>	See Rating Tables. Rating is the Maximum Peak DC Voltage.
<b>Rated Current:</b>	See Rating Tables. The rating is the Maximum allowable RMS current in amperes.
<b>Equivalent Series Resistance (ESR):</b>	See Rating Table. The rating is the maximum value measured at 25°C in the range of 20-100,000Hz.
<b>Capacitance:</b>	Values shown in the table at 25°C, 1KHz.
<b>Operating Temperature:</b>	-55°C to +105°C
<b>Storage Temperature:</b>	-55°C to +105°C
<b>Dissipation Factor:</b>	0.1% maximum at 25°C, 1KHz
<b>Insulation Resistance:</b>	200,000Megohms - $\mu$ F minimum at 100 VDC after 1-minute energization at 25°C.
<b>Leads:</b>	20 or 18 AWG electroplated solid copper wire leads. (gauge tolerance: $\pm$ 0.001 in.)
<b>Package Construction:</b>	Fire retardant tape wrap with polyurethane potting compound

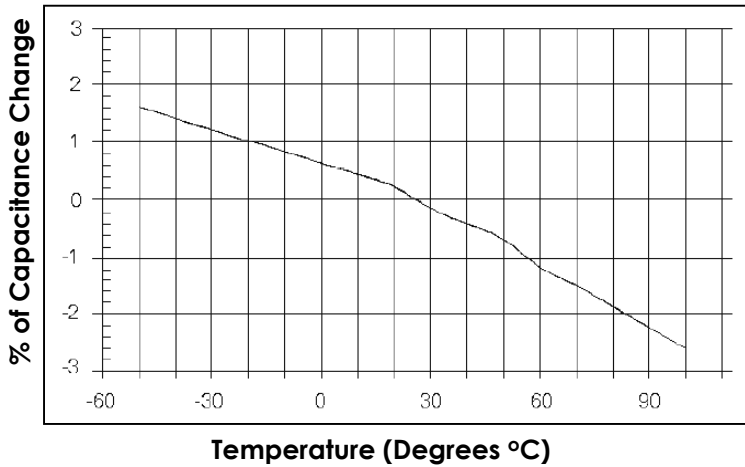


# (40L) Snubber & High-Current DC Ratings

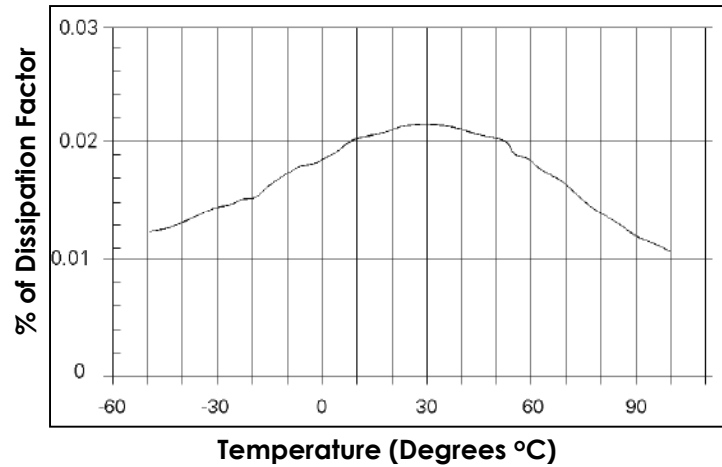
Voltage Rating	Capacitance (μF)	Catalog Number	Dimensions			Lead Size AWG	ESR (mΩ)	Current (A)
			T	W	L			
<b>400 VDC</b> (250 VAC)	0.47	40L3472	0.28	0.47	1.25	20	21	4
	0.68	40L3682	0.30	0.53	1.25	20	13	6
	1.00	40L3101	0.39	0.59	1.25	20	11	9
	1.50	40L3151	0.48	0.69	1.25	20	9	10
	2.00	40L3201	0.48	0.69	1.25	20	9	10
	2.20	40L3221	0.56	0.83	1.25	20	8	11
	3.30	40L3331	0.69	0.93	1.25	20	7	15
	4.70	40L3471	0.64	0.88	1.75	18	7	17
	6.80	40L3681	0.67	0.90	2.25	18	7	17
	8.00	40L3801	0.69	1.02	2.25	18	7	17
10.00	40L3100	0.70	1.05	2.25	18	7	17	
<b>600 VDC</b> (330 VAC)	0.47	40L6472	0.46	0.69	1.25	20	13	4
	0.68	40L6682	0.55	0.79	1.25	20	10	6
	1.00	40L6101	0.67	0.91	1.25	20	8	9
	1.50	40L6151	0.73	0.97	1.50	20	7	11
	2.20	40L6221	0.64	0.88	2.25	18	10	13



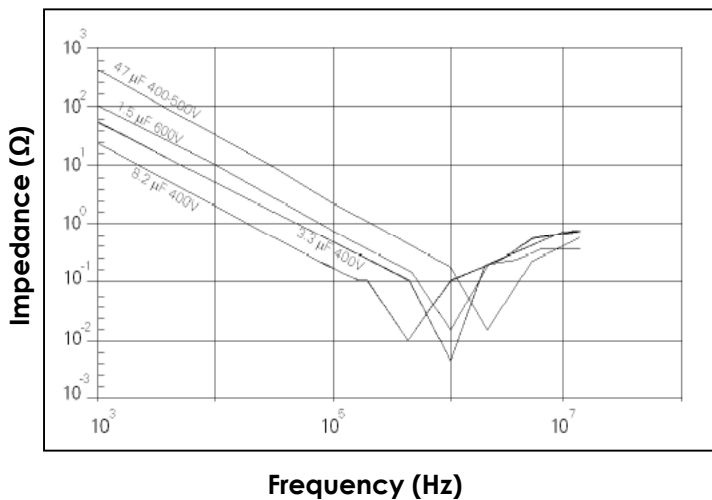
**% Capacitance vs Temperature**



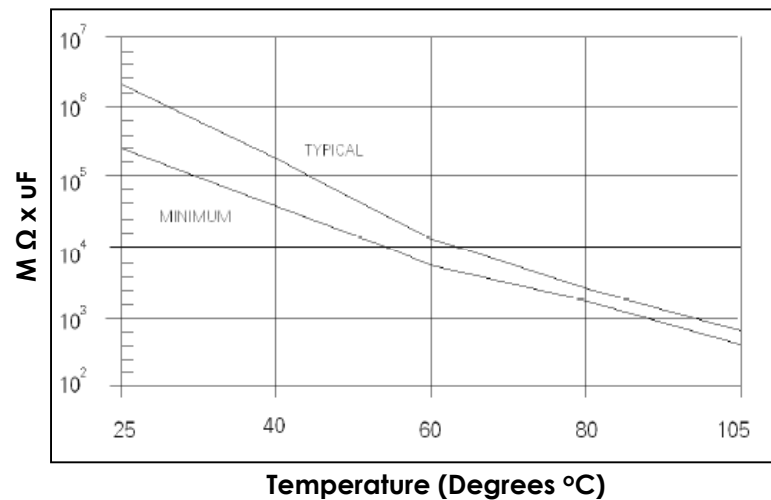
**% Dissipation Factor vs Temperature**



**Impedance vs Frequency**



**Insulation Resistance vs Temperature**





# (41L) Switching Capacitors

## 250, 400, 600, and 700 Volts Peak

05

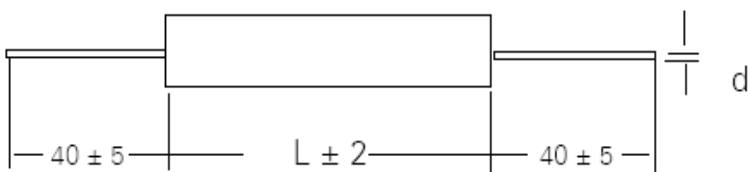
The 41L series are high performance metallized polypropylene, axial leaded capacitors **designed specifically for demanding electronic applications**. Applications for this series of capacitors include electronic ballasts, industrial controls, motor running, brushless motor speed control, switch mode power supplies (SMPS), un-interruptible power supply systems and induction ovens. These capacitors are **designed for minimum series inductance (ESL) and very low series resistance (ESR)** to minimize power dissipation and provide an extremely reliable product with excellent performance characteristics. If there are **any questions** regarding the correct application of these products, please **contact your RBC sales representative**.

### SPECIFICATIONS:

<b>Available Capacitance Range:</b>	0.68 to 30 $\mu$ F (Other custom ratings available)
<b>Capacitance Tolerance:</b>	$\pm$ 5%
<b>Rated Voltage VDC:</b>	250V – 400V – 600V – 700V
<b>Leads:</b>	20, 18, 16 AWG electroplated
<b>Package Construction:</b>	Polyester wrapping with epoxy resin end fill
<b>Flame Retardant:</b>	Polyester coating as UL 510, Epoxy resin as UL 94 VI
<b>Storage Temperature:</b>	-40°C to +85°C
<b>Operating Temperature:</b>	-40°C to +85°C (Operation at rated power, rated current and natural cooling)
<b>Insulation Resistance Test Conditions:</b>	Temperature: +25°C $\pm$ 5°C Voltage Charge Time: 1 Minute Voltage Charge: 100 VDC Typ. Value: 3,000 sec.
<b>Dissipation Factor (tg<math>\delta</math>)</b>	5 x 10 <sup>-4</sup> at 1 KHz and 25°C
<b>Capacitance Deviation:</b>	$\pm$ 1.5% Max on capacitance value at 25°C temperature range -40°C to +85°C
<b>Change of Capacitance Vs Op. Time:</b>	-3% after 30,000 Hrs at VAC or after 100,000 Hrs at VDC
<b>Life Expectancy:</b>	30,000 Hours at VAC
<b>Failure Quota:</b>	300/10 <sup>9</sup> components hours



Voltage Rating	Capacitance (μF)	Catalog Number	dV / dt V / us	IPKR (A)	ESR typ. at 100 KHz (m Ω)	IRMS @ 100 KHz -70°C (A)	Dimensions	
							D max	L
<b>250 VDC</b> (160 VAC)	1.0	41L2101	90	90	2.7	5	11.0	19
	1.5	41L2151	50	75	5.4	7	10.0	31
	2.2	41L2221	50	110	3.7	9	11.5	31
	2.5	41L2251	50	125	3.3	9	12.0	31
	3.0	41L2301	50	150	2.9	9	13.5	31
	5.0	41L2501	50	250	2.1	9	17.0	31
	6.8	41L2681	50	340	1.8	9	20.0	31
	10.0	41L2100	30	300	2.1	9	20.0	42
	15.0	41L2150	30	450	1.6	11	24.5	42
	20.0	41L2200	30	600	1.5	11	28.0	42
<b>400 VDC</b> (250 VAC)	0.68	41L4682	70	48	7.4	6	10.0	31
	1.0	41L4101	70	70	5.1	8	12.0	31
	1.5	41L4151	70	105	3.6	9	14.5	31
	2.0	41L4201	70	140	2.9	9	16.5	31
	2.2	41L4221	70	155	2.8	9	17.5	31
	2.5	41L4251	70	175	2.5	9	18.5	31
	3.0	41L4301	70	210	2.3	9	20.0	31
	4.0	41L4401	50	200	3.0	9	19.5	31
	4.7	41L4471	50	235	2.7	9	21.0	42
	5.0	41L4501	50	250	2.6	9	21.5	42
	6.8	41L4681	50	340	2.1	11	25.0	42
	10.0	41L4100	50	500	1.8	11	30.0	42
	15.0	41L4150	30	450	3.1	11	32.0	55
	<b>600 VDC</b> (330 VAC)	1.0	41L6101	100	100	4.2	9	15.5
2.0		41L6201	75	150	4.1	9	18.5	42
2.2		41L6221	75	165	3.9	9	19.5	42
3.0		41L6301	75	225	3.1	9	22.5	42
4.7		41L6471	75	350	2.3	11	27.5	42
5.0		41L6501	75	375	2.2	11	28.5	42
6.8		41L6681	50	340	4.5	11	28.5	55
10.0		41L6100	50	500	3.5	11	34.5	55
<b>700 VDC</b> (400 VAC)	0.68	41L7682	125	85	4.6	9	17.0	31
	1.0	41L7101	125	125	3.4	9	20.5	31
	1.5	41L7151	90	135	4.2	9	20.5	42
	2.0	41L7201	90	180	3.3	11	23.5	42
	2.2	41L7221	90	200	3.1	11	24.5	42
	3.0	41L7301	90	270	2.6	11	28.5	42
	4.0	41L7401	90	360	2.2	11	33.0	42
	4.7	41L7471	60	280	5.2	11	30.0	55
	5.0	41L7501	60	300	4.9	11	30.5	55



<b>D</b>	< 10mm	> 10 mm ≤ 22 mm	> 22 mm
<b>d</b>	0.8 mm (20 AWG)	1.0 mm (18 AWG)	1.2 mm (16 AWG)

<b>Vdc</b>	250 V	400 V	600 V	700 V	850 V
<b>Vp</b>	400 V	600 V	800 V	1000 V	1200 V

# (42L) Snubber & High-Current DC

07

## 850, 1200, 2000, and 3000 Volts Peak

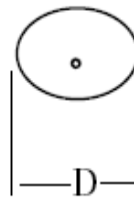
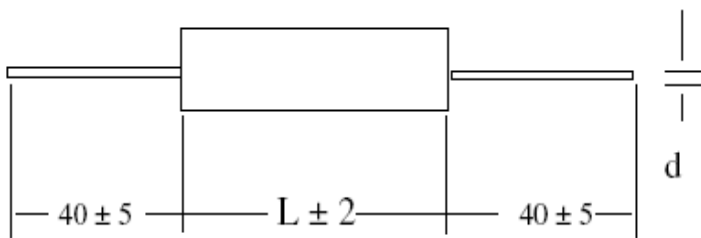
The 42L series are high performance metallized polypropylene, axial leaded capacitors **designed for tough high voltage electronic applications**. Applications for this product include battery charging systems, industrial controls, AC inverters, AC drives, un-interruptable power supply systems and power conditioning products. These capacitors are **designed for minimum series inductance (ESL) and very low series resistance (ESR)** to minimize power dissipation and provide an extremely reliable product with unsurpassed performance characteristics. If there are **any questions** regarding the correct application of these products, please **contact your RBC sales representative**.

### SPECIFICATIONS:

<b>Available Capacitance Range:</b>	0.01 to 2.6 $\mu$ F (Other custom ratings available)
<b>Capacitance Tolerance:</b>	$\pm$ 5%
<b>Rated Voltage VDC:</b>	850V – 1200V – 2000V – 3000V
<b>Leads:</b>	20, 18, 16 AWG electroplated
<b>Package Construction:</b>	Polyester wrapping with epoxy resin end fill
<b>Flame Retardant:</b>	Polyester coating as UL 510, Epoxy resin as UL 94 VI
<b>Storage Temperature:</b>	-40°C to +85°C
<b>Operating Temperature:</b>	-40°C to +85°C (Operation at rated power, rated current and natural cooling)
<b>Insulation Resistance Test Conditions:</b>	Temperature: +25°C $\pm$ 5°C Voltage Charge Time: 1 Minute Voltage Charge: 100 VDC Typ. Value: 3,000 sec.
<b>Dissipation Factor (tg<math>\delta</math>):</b>	5 x 10 <sup>-4</sup> at 1 KHz and 25°C
<b>Capacitance Deviation:</b>	$\pm$ 1.5% Max on capacitance value at 25°C temperature range -40°C to +85°C
<b>Change of Capacitance Vs Op. Time:</b>	-3% after 30,000 Hrs at VAC or after 100,000 Hrs at VDC
<b>Life Expectancy:</b>	30,000 Hours at VAC
<b>Failure Quota:</b>	300/10 <sup>9</sup> components hours

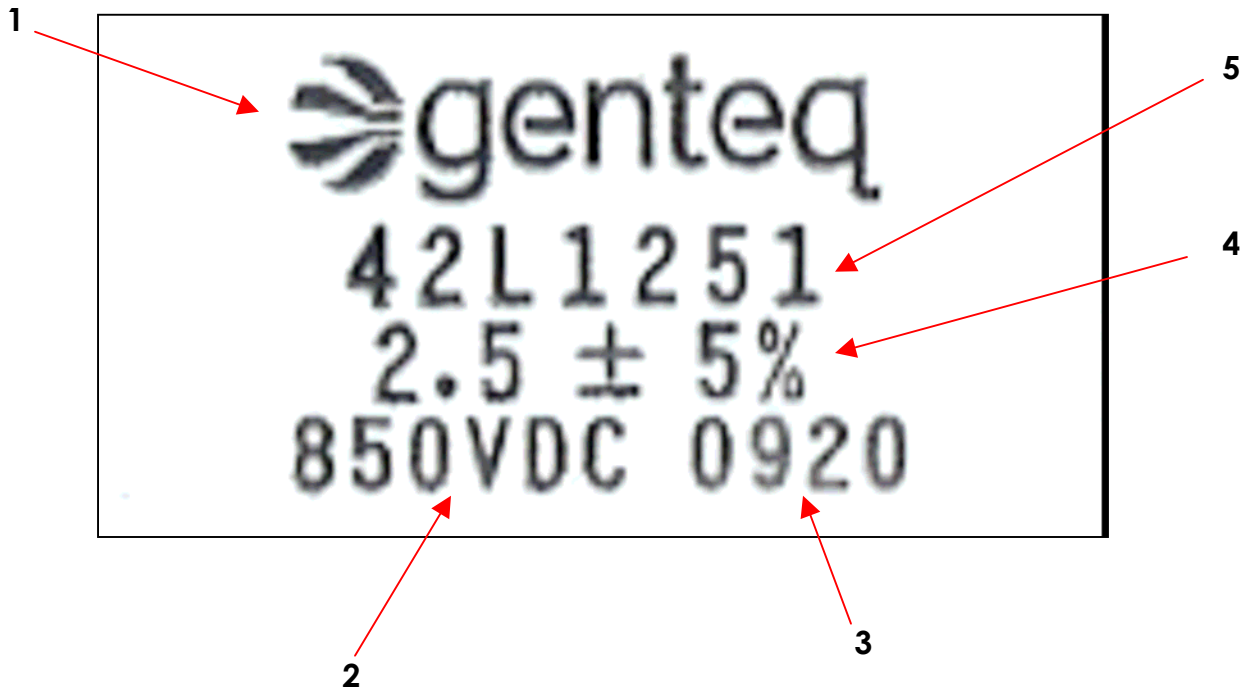


Voltage Rating	Capacitance (µF)	Catalog Number	dV / dt V / us	IPKR (A)	ESR typ. at 100 KHz (m Ω)	IRMS @ 100 KHz -70°C (A)	Dimensions	
							D max	L
<b>850 VDC</b> (450 VAC)	0.150	42L1152	300	45	9.5	5	10.0	31
	0.220	42L1222	300	66	6.6	7	12.0	31
	0.330	42L1332	300	100	4.6	9	14.5	31
	0.470	42L1472	300	140	3.5	9	17.0	31
	0.680	42L1682	300	200	2.7	9	20.5	31
	1.000	42L1101	200	200	3.1	9	20.5	42
	1.500	42L1151	200	300	2.3	11	24.5	42
	2.000	42L1201	200	400	2.0	11	28.5	42
	2.200	42L1221	200	440	1.9	11	30.0	42
2.500	42L1251	200	500	1.9	11	31.5	42	
<b>1200 VDC</b> (500 VAC)	0.100	42L2102	1100	110	8.7	7	14.0	31
	0.150	42L2152	1100	165	6.1	9	17.0	31
	0.220	42L2222	1100	240	4.5	9	20.5	31
	0.330	42L2332	650	215	4.7	9	19.5	42
	0.470	42L2472	650	305	3.6	9	23.0	42
	0.680	42L2682	650	440	2.7	11	27.5	42
	1.000	42L2101	650	650	2.3	11	33.5	42
	1.200	42L2121	400	480	2.8	11	29.0	55
	<b>2000 VDC</b> (630 VAC)	0.022	42L3223	1750	39	31.9	3	10.5
0.033		42L3333	1750	58	21.4	4	12.5	31
0.047		42L3473	1750	80	15.2	5	14.5	31
0.068		42L3683	1750	120	10.8	7	17.0	31
0.100		42L3102	1750	175	7.6	9	20.5	31
0.150		42L3152	1000	150	7.4	9	19.5	42
0.220		42L3222	1000	220	5.4	9	23.5	42
0.330		42L3332	1000	330	3.9	11	28.5	42
0.470		42L3472	1000	470	3.1	11	33.5	42
0.560		42L3562	650	365	3.9	11	29.0	55
<b>3000 VDC</b> (750 VAC)	0.010	42L4103	2750	28	61.6	2	12.0	31
	0.015	42L4153	2750	41	41.3	3	14.0	31
	0.022	42L4223	2750	60	28.4	4	16.5	31
	0.033	42L4333	2750	90	19.2	5	20.0	31
	0.047	42L4473	1600	75	17.9	6	18.5	42
	0.068	42L4683	1600	110	12.6	8	22.0	42
	0.100	42L4102	1600	160	8.8	11	26.5	42
	0.150	42L4152	1600	240	6.2	11	32.0	42



<b>D</b>	< 10mm	> 10 mm ≤ 22 mm	> 22 mm
<b>d</b>	0.8 mm (20 AWG)	1.0 mm (18 AWG)	1.2 mm (16 AWG)

<b>Vdc</b>	850 V	1200 V	2000 V	3000 V
<b>Vp</b>	1200 V	1600 V	2400 V	3500 V



- 1. Product / Brand
- 2. DC Voltage Rating
- 3. Manufacturing Date Code

*Example:*

<b><u>09</u></b>	<b><u>20</u></b>
↑	↑
Year (Last Digits of Year)	Fiscal Week

- 4. Capacitance in Micro-Farads with Tolerance
- 5. Genteq Catalog Model Number



AVAILABLE REGAL-BELOIT COMPONENT CAPACITOR PUBLICATIONS		
Publication	Description	Replaces
GTC-001	AC Capacitors for Motor Run Applications	CPD-510
GTC-002	AC Capacitors for HID Lighting Applications	CPD-511
GTC-003	Capacitors for AC and DC General Purpose Applications	CPD-512
GTC-004	Screw Terminal Electrolytic Capacitors	CPD-517
GTC-005	Snubber, High Current DC, and Switching Capacitors	CPD-518, 519, 520
GTC-006	Dry Capacitors	New Pub.
GTC-007	Snap-In Electrolytic Capacitors	New Pub.
PLC-001	PROLINE Capacitors	New Pub.

Please contact your local Regal-Beloit Sales Representative for further information.

Call or write directly to:

**Genteq Capacitors**

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