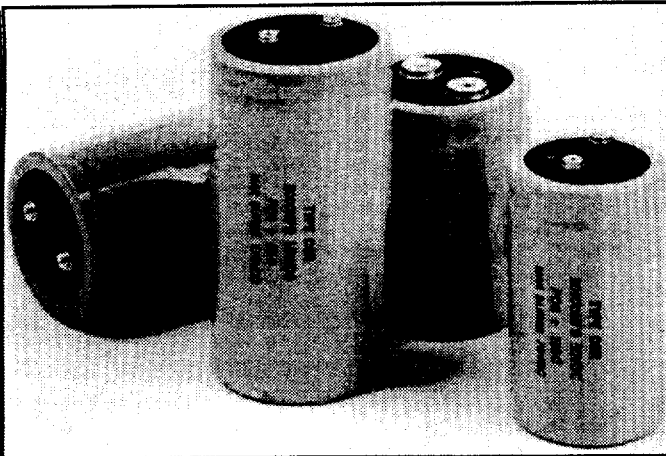


# TYPE CGR

## Computer Grade Aluminum Electrolytic Capacitor

### FEATURES:

- Very Low ESR
- High Reliability
- Very High Ripple Current
- -55°C to +105°C Operation



The CGR capacitor manufactured by Aerovox is specifically designed as a very low ESR, high ripple current device capable of operating between -55°C and +105°C.

Type GCR capacitors are engineered for use as input or output filters in power supplies requiring long life, very low equivalent resistance, and very high ripple current capability.

### PERFORMANCE CHARACTERISTICS:

- **VOLTAGE:** 6.3 to 250 VDC
- **OPERATING TEMPERATURE:**  
-55°C to +105°C
- **CAPACITANCE TOLERANCE:**  
-10%, +75% (6.3 - 150 VDC)  
-10%, +50% (200 - 250 VDC)
- **QA STABILITY TEST:** After application of DC rated voltage for 2,000 hours at +85°C, stabilize at +25°C:
  - Capacitance change  $\pm 10\%$ .
  - DC leakage current meets initial limits.
  - ESR equal to or less than 1.3x specified limit.

#### • RIPPLE CURRENT

The maximum ripple current recommended for CGR capacitors is shown in the Standard Rating Table. Ripple current ratings are based on 120Hz ripple at 85°C. Maximum ripple current may be adjusted for operation at a frequency other than 120Hz and a temperature other than 85°C by multiplying the following factors:

Frequency	Case Diameter (in) Ripple Multipliers		
	1.375" Dia.	1.75 & 2.0" Dia.	2.5 & 3.0" Dia.
60 Hz	0.8	0.80	0.80
400 Hz	1.0	1.05	1.05
1 kHz	1.20	1.10	1.10
20 kHz	1.20	1.15	1.08

Ambient Temperature	Ripple Multiplier
+95°C	0.58
+85°C	1.0
+75°C	1.29
+65°C	1.5
+55°C	1.7
+45°C	1.9

#### • DC LEAKAGE CURRENT

**PRE-CONDITIONING.** In the period 24 to 48 hours prior to test, rated working voltage shall be applied to the capacitor for a minimum of 30 minutes.

**MEASUREMENT.** Measurement shall be made at 25°C  $\pm 5^\circ\text{C}$ . Voltage shall be applied to the capacitor thru a current limiting resistor. The leakage current shall be measured 5 minutes after the capacitor reaches rated voltage. Leakage current shall not exceed the value calculated as shown:

$$I = .0015 \sqrt{CV}$$

C = Rated Capacitance ( $\mu\text{F}$ )

V = Rated Voltage (volts)

I = Leakage Current (mA)

In no case, however, shall the dc leakage current limit exceed 1.5 mA.

## Case Code Chart

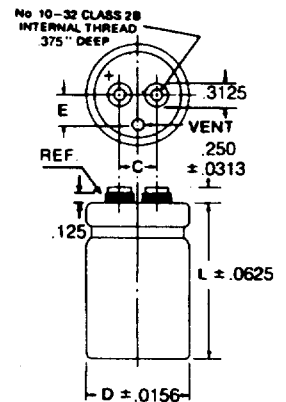
Case Code	Uninsulated Can Size						Mounting Bracket
	Inches		(mm)		Inches	(mm)	
	Dia.	Lg.	Dia.	Lg.	C	C	
R2C	1.375	2.125	35	54.0	.500	12.7	VR3
R2L	1.375	2.625	35	67.0	.500	12.7	VR3
R3C	1.375	3.125	35	79.4	.500	12.7	VR3
R3L	1.375	3.625	35	92.0	.500	12.7	VR3
R4C	1.375	4.125	35	105	.500	12.7	VR3
R4L	1.375	4.625	35	117.5	.500	12.7	VR3
R5C	1.375	5.125	35	130	.500	12.7	VR3
R5L	1.375	5.625	35	143	.500	12.7	VR3
U2C	1.750	2.125	44.5	54.0	.750	19	VR6
U2L	1.750	2.625	44.5	67.0	.750	19	VR6
U3C	1.750	3.125	44.5	79.4	.750	19	VR6
U3L	1.750	3.625	44.5	92.0	.750	19	VR6
U4C	1.750	4.125	44.5	105	.750	19	VR6
U4L	1.750	4.625	44.5	117.5	.750	19	VR6
U5C	1.750	5.125	44.5	130	.750	19	VR6
U5L	1.750	5.625	44.5	143	.750	19	VR6
V2C	2.000	2.125	50.8	54.0	.875	22.23	VR8
V2L	2.000	2.625	50.8	67.0	.875	22.23	VR8
V3C	2.000	3.125	50.8	79.4	.875	22.23	VR8
V3L	2.000	3.625	50.8	92.0	.875	22.23	VR8
V4C	2.000	4.125	50.8	105	.875	22.23	VR8
V4L	2.000	4.625	50.8	117.5	.875	22.23	VR8
V5C	2.000	5.125	50.8	130	.875	22.23	VR8
V5L	2.000	5.625	50.8	143	.875	22.23	VR8
W3C	2.500	3.125	63.5	79.4	1.125	28.58	VR10
W3L	2.500	3.625	63.5	92.0	1.125	28.58	VR10
W4C	2.500	4.125	63.5	105	1.125	28.58	VR10
W4L	2.500	4.625	63.5	117.5	1.125	28.58	VR10
W5C	2.500	5.125	63.5	130	1.125	28.58	VR10
W5L	2.500	5.625	63.5	143	1.125	28.58	VR10
X3L	3.000	3.625	76.2	92.0	1.250	31.75	VR12
X4C	3.000	4.125	76.2	105	1.250	31.75	VR12
X4L	3.000	4.625	76.2	117.5	1.250	31.75	VR12
X5C	3.000	5.125	76.2	130	1.250	31.75	VR12
X5L	3.000	5.625	76.2	143	1.250	31.75	VR12
X5R	3.000	5.875	76.2	149	1.250	31.75	VR12
X6L	3.000	6.625	76.2	168	1.250	31.75	VR12
X7L	3.000	7.625	76.2	194	1.250	31.75	VR12
X8L	3.000	8.625	76.2	219	1.250	31.75	VR12

\*Add .015 inches to diameter and .045 inches to length for PVC insulating sleeve.

## High Post (H) (Standard)

Can Dia.	E
1.375	.344
1.750	.406
2.000	.500
2.500	.625
3.000	.750

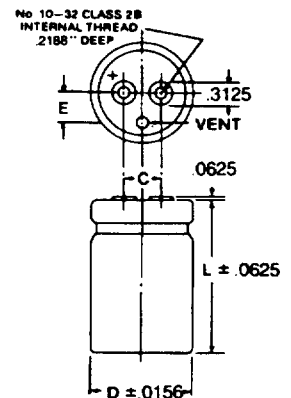
Not available in 1" dia.



## Low Post (L)

Can Dia.	E
1.375	.344
1.750	.406
2.000	.500
2.500	.625
3.000	.750

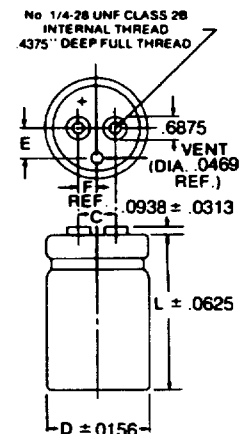
Not available in 1" dia.



## Low Resistance Screw-Insert (D)

Can dia.	E	C	F
2.5	.625	1.125	.562
3.0	.750	1.250	.625

Not available in 1.375", 1.750" and 2" dia.



# Type CGR

# Part Number Information

## Aerovox Catalog #

CGR 114 U 016 V5L 3 P H

### Aerovox Type Number

This identifies the basic capacitor design.

### Capacitance

Expressed in microfarads. The first two digits are significant figures, the third is the number of zeros.

### Capacitance Tolerance

U = -10%, +75% (0 to 60 VDC)  
T = -10%, +50% (75 to 250 VDC)  
N = -10%, +100%  
M =  $\pm 20\%$

### DC Voltage Rating

Expressed in volts. Zeros are used to precede the voltage rating where necessary to complete the three digit block. The letter "R" indicates a decimal point.

### Case Code

(see preceding page)

### Insulating Sleeve

3 = .008 PVC insulating sleeve. (Standard)  
4 = .012" Minimum thickness PVC insulating sleeve.

### Polarity

P = Polar

### Terminal

H = High Post  
L = Low Post

F = High Post Metric Thread  
G = Low Post Metric Thread

### Stud Mount

For stud mount, add an S after terminal designation

D = Low Resistance Screw Insert

# Type CGR

Capacitance μF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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## 6.3 WVDC; 20 VDC Surge

15,000	R1N	.0500	4.59	CGR153U6R3R1N3PH
23,000	R2C	.0326	6.02	CGR233U6R3R2C3PH
33,000	R2L	.0230	8.02	CGR333U6R3R2L3PH
43,000	R3C	.0174	9.97	CGR433U6R3R3C3PH
51,000	R3L	.0150	11.49	CGR513U6R3R3L3PH
61,000	R4C	.0122	13.41	CGR613U6R3R4C3PH
71,000	R4L	.0105	15.31	CGR713U6R3R4L3PH
82,000	R5C	.0091	17.21	CGR823U6R3R5C3PH
92,000	R5L	.0081	18.98	CGR923U6R3R5L3PH
42,000	U2C	.0200	9.07	CGR423U6R3U2C3PH
61,000	U2L	.0140	11.92	CGR613U6R3U2L3PH
80,000	U3C	.0103	14.70	CGR803U6R3U3C3PH
95,000	U3L	.0090	17.13	CGR953U6R3U3L3PH
110,000	U4C	.0075	19.86	CGR114U6R3U4C3PH
130,000	U4L	.0063	22.28	CGR134U6R3U4L3PH
150,000	U5C	.0055	24.39	CGR154U6R3U5C3PH
170,000	U5L	.0048	27.51	CGR174U6R3U5L3PH
59,000	V2C	.0160	10.79	CGR593U6R3V2C3PH
85,000	V2L	.0108	14.13	CGR853U6R3V2L3PH
110,000	V3C	.0083	17.48	CGR114U6R3V3C3PH
130,000	V3L	.0070	20.07	CGR134U6R3V3L3PH
150,000	V4C	.0061	23.10	CGR154U6R3V4C3PH
180,000	V4L	.0051	26.11	CGR184U6R3V4L3PH
210,000	V5C	.0043	29.12	CGR214U6R3V5C3PH
230,000	V5L	.0040	32.96	CGR234U6R3V5L3PH
170,000	W3C	.0070	21.11	CGR174U6R3W3C3PH
200,000	W3L	.0060	24.77	CGR204U6R3W3L3PH
240,000	W4C	.0050	28.40	CGR244U6R3W4C3PH
280,000	W4L	.0041	32.71	CGR284U6R3W4L3PH
320,000	W5C	.0040	36.31	CGR324U6R3W5C3PH
360,000	W5L	.0032	40.56	CGR364U6R3W5L3PH
300,000	X3L	.0056	28.18	CGR304U6R3X3L3PH
360,000	X4C	.0050	32.48	CGR364U6R3X4C3PH
420,000	X4L	.0040	36.75	CGR424U6R3X4L3PH
480,000	X5C	.0035	40.00	CGR484U6R3X5C3PH
550,000	X5L	.0030	45.25	CGR554U6R3X5L3PH

## 7.5 WVDC; 12 VDC Surge

12,000	R1N	.0500	4.58	CGR123U7R5R1N3PH
18,000	R2C	.0332	6.00	CGR183U7R5R2C3PH
26,000	R2L	.0230	8.02	CGR263U7R5R2L3PH
34,000	R3C	.0176	9.90	CGR343U7R5R3C3PH
40,000	R3L	.0150	11.42	CGR403U7R5R3L3PH
49,000	R4C	.0122	13.37	CGR493U7R5R4C3PH
57,000	R4L	.0105	15.21	CGR573U7R5R4L3PH
65,000	R5C	.0092	17.10	CGR653U7R5R5C3PH
73,000	R5L	.0082	18.90	CGR733U7R5R5L3PH
33,000	U2C	.0200	9.00	CGR333U7R5U2C3PH
49,000	U2L	.0134	11.85	CGR493U7R5U2L3PH
64,000	U3C	.0103	14.62	CGR643U7R5U3C3PH

# Standard Ratings

Capacitance μF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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## 7.5 WVDC; 12 VDC Surge

75,000	U3L	.0088	17.05	CGR753U7R5U3L3PH
90,000	U4C	.0073	19.75	CGR903U7R5U4C3PH
100,000	U4L	.0066	22.24	CGR104U7R5U4L3PH
120,000	U5C	.0055	24.34	CGR124U7R5U5C3PH
130,000	U5L	.0050	27.46	CGR134U7R5U5L3PH
47,000	V2C	.0154	10.72	CGR473U7R5V2C3PH
67,000	V2L	.0108	14.11	CGR673U7R5V2L3PH
88,000	V3C	.0082	17.42	CGR883U7R5V3C3PH
100,000	V3L	.0072	20.00	CGR104U7R5V3L3PH
120,000	V4C	.0060	23.07	CGR124U7R5V4C3PH
140,000	V4L	.0051	26.37	CGR144U7R5V4L3PH
160,000	V5C	.0045	29.05	CGR164U7R5V5C3PH
180,000	V5L	.0040	32.87	CGR184U7R5V5L3PH
130,000	W3C	.0071	21.06	CGR134U7R5W3C3PH
160,000	W3L	.0058	24.70	CGR164U7R5W3L3PH
190,000	W4C	.0049	28.34	CGR194U7R5W4C3PH
220,000	W4L	.0042	32.59	CGR224U7R5W4L3PH
250,000	W5C	.0037	36.15	CGR254U7R5W5C3PH
280,000	W5L	.0033	40.42	CGR284U7R5W5L3PH
240,000	X3L	.0059	28.06	CGR244U7R5X3L3PH
290,000	X4C	.0048	32.33	CGR294U7R5X4C3PH
340,000	X4L	.0041	36.32	CGR344U7R5X4L3PH
380,000	X5C	.0037	40.00	CGR384U7R5X5C3PH
430,000	X5L	.0033	45.06	CGR434U7R5X5L3PH

## 16 WVDC; 20 VDC Surge

7,700	R1N	.0506	4.50	CGR772U016R1N3PH
11,000	R2C	.0354	5.97	CGR113U016R2C3PH
16,000	R2L	.0243	7.94	CGR163U016R2L3PH
21,000	R3C	.0185	9.79	CGR213U016R3C3PH
25,000	R3L	.0156	11.30	CGR253U016R3L3PH
30,000	R4C	.0130	13.31	CGR303U016R4C3PH
35,000	R4L	.0111	15.08	CGR353U016R4L3PH
41,000	R5C	.0095	16.95	CGR413U016R5C3PH
46,000	R5L	.0084	18.77	CGR463U016R5L3PH
21,000	U2C	.0204	8.89	CGR213U016U2C3PH
30,000	U2L	.0143	11.77	CGR303U016U2L3PH
40,000	U3C	.0107	14.46	CGR403U016U3C3PH
47,000	U3L	.0091	16.92	CGR473U016U3L3PH
57,000	U4C	.0075	19.60	CGR573U016U4C3PH
66,000	U4L	.0065	22.07	CGR663U016U4L3PH
76,000	U5C	.0056	24.28	CGR763U016U5C3PH
85,000	U5L	.0050	27.35	CGR853U016U5L3PH
29,000	V2C	.0162	10.66	CGR293U016V2C3PH
42,000	V2L	.0111	14.00	CGR423U016V2L3PH
55,000	V3C	.0085	17.28	CGR553U016V3C3PH
65,000	V3L	.0072	19.81	CGR653U016V3L3PH
78,000	V4C	.0060	22.93	CGR783U016V4C3PH
92,000	V4L	.0051	26.25	CGR923U016V4L3PH
100,000	V5C	.0047	28.97	CGR104U016V5C3PH

# Type CGR

# Standard Ratings

Capacitance μF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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16 WVDC; 20 VDC Surge

110,000	V5L	.0042	32.59	CGR114U016V5L3PH
85,000	W3C	.0070	20.96	CGR853U016W3C3PH
100,000	W3L	.0060	24.62	CGR104U016W3L3PH
120,000	W4C	.0050	28.25	CGR124U016W4C3PH
140,000	W4L	.0042	32.32	CGR144U016W4L3PH
160,000	W5C	.0037	35.87	CGR164U016W5C3PH
180,000	W5L	.0033	40.02	CGR184U016W5L3PH
150,000	X3L	.0056	27.76	CGR154U016X3L3PH
180,000	X4C	.0046	32.00	CGR184U016X4C3PH
210,000	X4L	.0040	35.52	CGR214U016X4L3PH
240,000	X5C	.0035	39.94	CGR244U016X5C3PH
270,000	X5L	.0031	44.63	CGR274U016X5L3PH

20 WVDC; 30 VDC Surge

5,200	R1N	.0519	4.47	CGR522U020R1N3PH
7,800	R2C	.0346	5.95	CGR782U020R2C3PH
11,000	R2L	.0245	7.95	CGR113U020R2L3PH
14,000	R3C	.0192	9.67	CGR143U020R3C3PH
17,000	R3L	.0158	11.19	CGR173U020R3L3PH
20,000	R4C	.0135	13.10	CGR203U020R4C3PH
24,000	R4L	.0112	14.75	CGR243U020R4L3PH
27,000	R5C	.0100	16.79	CGR273U020R5C3PH
31,000	R5L	.0087	18.45	CGR313U020R5L3PH
14,000	U2C	.0214	8.52	CGR143U020U2C3PH
20,000	U2L	.0150	11.33	CGR203U020U2L3PH
27,000	U3C	.0111	14.16	CGR273U020U3C3PH
32,000	U3L	.0093	16.49	CGR323U020U3L3PH
38,000	U4C	.0078	19.27	CGR383U020U4C3PH
45,000	U4L	.0066	21.83	CGR453U020U4L3PH
51,000	U5C	.0058	24.26	CGR513U020U5C3PH
58,000	U5L	.0051	27.03	CGR583U020U5L3PH
20,000	V2C	.0170	10.59	CGR203U020V2C3PH
29,000	V2L	.0117	13.87	CGR293U020V2L3PH
37,000	V3C	.0091	17.12	CGR373U020V3C3PH
44,000	V3L	.0077	19.75	CGR443U020V3L3PH
53,000	V4C	.0064	22.87	CGR533U020V4C3PH
62,000	V4L	.0054	26.17	CGR623U020V4L3PH
71,000	V5C	.0047	28.94	CGR713U020V5C3PH
80,000	V5L	.0042	32.46	CGR803U020V5L3PH
58,000	W3C	.0071	20.92	CGR583U020W3C3PH
68,000	W3L	.0061	24.48	CGR683U020W3L3PH
82,000	W4C	.0050	28.22	CGR823U020W4C3PH
96,000	W4L	.0043	32.19	CGR963U020W4L3PH
100,000	W5C	.0041	35.72	CGR104U020W5C3PH
120,000	W5L	.0034	39.85	CGR124U020W5L3PH
100,000	X3L	.0066	27.60	CGR104U020X3L3PH
120,000	X4C	.0055	31.82	CGR124U020X4C3PH
140,000	X4L	.0047	35.00	CGR144U020X4L3PH
160,000	X5C	.0041	39.72	CGR164U020X5C3PH
180,000	X5L	.0036	44.47	CGR184U020X5L3PH

Capacitance μF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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25 WVDC; 40 VDC Surge

4,600	R1N	.0521	4.46	CGR462U025R1N3PH
6,900	R2C	.0347	5.95	CGR692U025R2C3PH
10,000	R2L	.0240	7.81	CGR103U025R2L3PH
13,000	R3C	.0184	9.64	CGR133U025R3C3PH
15,000	R3L	.0160	11.16	CGR153U025R3L3PH
18,000	R4C	.0133	12.81	CGR183U025R4C3PH
21,000	R4L	.0114	14.70	CGR213U025R4L3PH
24,000	R5C	.0100	16.70	CGR243U025R5C3PH
27,000	R5L	.0088	18.27	CGR273U025R5L3PH
12,000	U2C	.0220	8.45	CGR123U025U2C3PH
18,000	U2L	.0147	11.27	CGR183U025U2L3PH
24,000	U3C	.0110	14.10	CGR243U025U3C3PH
28,000	U3L	.0094	16.42	CGR283U025U3L3PH
34,000	U4C	.0077	19.19	CGR343U025U4C3PH
40,000	U4L	.0066	21.81	CGR403U025U4L3PH
45,000	U5C	.0058	24.12	CGR453U025U5C3PH
51,000	U5L	.0051	26.84	CGR513U025U5L3PH
17,000	V2C	.0176	10.53	CGR173U025V2C3PH
25,000	V2L	.0120	13.67	CGR253U025V2L3PH
33,000	V3C	.0090	17.00	CGR333U025V3C3PH
39,000	V3L	.0076	19.60	CGR393U025V3L3PH
47,000	V4C	.0063	22.81	CGR473U025V4C3PH
55,000	V4L	.0054	26.09	CGR553U025V4L3PH
63,000	V5C	.0047	28.89	CGR633U025V5C3PH
71,000	V5L	.0042	32.27	CGR713U025V5L3PH
51,000	W3C	.0074	20.87	CGR513U025W3C3PH
61,000	W3L	.0062	24.17	CGR613U025W3L3PH
73,000	W4C	.0052	28.19	CGR733U025W4C3PH
85,000	W4L	.0044	32.09	CGR853U025W4L3PH
97,000	W5C	.0039	35.69	CGR973U025W5C3PH
100,000	W5L	.0038	39.70	CGR104U025W5L3PH
92,000	X3L	.0064	27.38	CGR923U025X3L3PH
110,000	X4C	.0053	31.63	CGR114U025X4C3PH
120,000	X4L	.0049	34.54	CGR124U025X4L3PH
140,000	X5C	.0042	39.48	CGR144U025X5C3PH
160,000	X5L	.0036	44.24	CGR164U025X5L3PH

30 WVDC; 45 VDC Surge

4,000	R1N	.0537	4.44	CGR402U030R1N3PH
6,000	R2C	.0358	5.93	CGR602U030R2C3PH
8,800	R2L	.0244	7.80	CGR882U030R2L3PH
11,000	R3C	.0195	9.60	CGR113U030R3C3PH
13,000	R3L	.0165	11.15	CGR133U030R3L3PH
16,000	R4C	.0134	12.71	CGR163U030R4C3PH
18,000	R4L	.0119	14.68	CGR183U030R4L3PH
21,000	R5C	.0102	16.64	CGR213U030R5C3PH
24,000	R5L	.0089	18.19	CGR243U030R5L3PH
11,000	U2C	.0218	8.40	CGR113U030U2C3PH
16,000	U2L	.0150	11.24	CGR163U030U2L3PH
21,000	U3C	.0114	14.00	CGR213U030U3C3PH

# Type CGR

# Standard Ratings

Capacitance µF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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### 30 WVDC; 45 VDC Surge

25,000	U3L	.0096	16.37	CGR253U030U3L3PH
30,000	U4C	.0080	19.07	CGR303U030U4C3PH
35,000	U4L	.0068	21.75	CGR353U030U4L3PH
40,000	U5C	.0060	24.10	CGR403U030U5C3PH
45,000	U5L	.0053	26.77	CGR453U030U5L3PH
15,000	V2C	.0180	10.49	CGR153U030V2C3PH
22,000	V2L	.0122	13.54	CGR223U030V2L3PH
29,000	V3C	.0093	16.84	CGR293U030V3C3PH
34,000	V3L	.0079	19.50	CGR343U030V3L3PH
41,000	V4C	.0065	22.73	CGR413U030V4C3PH
48,000	V4L	.0056	26.00	CGR483U030V4L3PH
55,000	V5C	.0049	28.85	CGR553U030V5C3PH
62,000	V5L	.0043	32.04	CGR623U030V5L3PH
45,000	W3C	.0077	20.84	CGR453U030W3C3PH
53,000	W3L	.0066	24.16	CGR533U030W3L3PH
63,000	W4C	.0055	28.16	CGR633U030W4C3PH
74,000	W4L	.0047	31.90	CGR743U030W4L3PH
85,000	W5C	.0041	35.63	CGR853U030W5C3PH
95,000	W5L	.0036	39.56	CGR953U030W5L3PH
80,000	X3L	.0065	27.24	CGR803U030X3L3PH
96,000	X4C	.0054	31.40	CGR963U030X4C3PH
110,000	X4L	.0047	34.19	CGR114U030X4L3PH
120,000	X5C	.0043	39.16	CGR124U030X5C3PH
140,000	X5L	.0037	44.00	CGR144U030X5L3PH

### 40 WVDC; 60 VDC Surge

2,600	R1N	.0653	4.00	CGR262U040R1N3PH
4,000	R2C	.0425	4.96	CGR402U040R2C3PH
5,700	R2L	.0298	7.03	CGR572U040R2L3PH
7,500	R3C	.0226	7.98	CGR752U040R3C3PH
8,900	R3L	.0191	9.98	CGR892U040R3L3PH
10,000	R4C	.0171	11.67	CGR103U040R4C3PH
12,000	R4L	.0141	13.64	CGR123U040R4L3PH
14,000	R5C	.0121	14.89	CGR143U040R5C3PH
16,000	R5L	.0106	16.22	CGR163U040R5L3PH
7,400	U2C	.0250	7.52	CGR742U040U2C3PH
10,000	U2L	.0185	10.54	CGR103U040U2L3PH
14,000	U3C	.0132	12.77	CGR143U040U3C3PH
16,000	U3L	.0115	14.78	CGR163U040U3L3PH
19,000	U4C	.0097	17.45	CGR193U040U4C3PH
23,000	U4L	.0080	19.47	CGR233U040U4L3PH
26,000	U5C	.0071	21.56	CGR263U040U5C3PH
29,000	U5L	.0063	23.38	CGR293U040U5L3PH
10,000	V2C	.0205	9.56	CGR103U040V2C3PH
14,000	V2L	.0146	12.13	CGR143U040V2L3PH
19,000	V3C	.0107	14.69	CGR193U040V3C3PH
22,000	V3L	.0093	17.67	CGR223U040V3L3PH
27,000	V4C	.0075	20.17	CGR273U040V4C3PH
31,000	V4L	.0066	23.03	CGR313U040V4L3PH
36,000	V5C	.0056	25.73	CGR363U040V5C3PH

Capacitance µF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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### 40 WVDC; 60 VDC Surge

41,000	V5L	.0050	29.00	CGR413U040V5L3PH
29,000	W3C	.0089	19.26	CGR293U040W3C3PH
35,000	W3L	.0074	21.86	CGR353U040W3L3PH
42,000	W4C	.0061	25.47	CGR423U040W4C3PH
49,000	W4L	.0053	29.27	CGR493U040W4L3PH
56,000	W5C	.0046	32.46	CGR563U040W5C3PH
63,000	W5L	.0041	36.15	CGR633U040W5L3PH
53,000	X3L	.0070	25.47	CGR533U040X3L3PH
63,000	X4C	.0059	29.43	CGR633U040X4C3PH
74,000	X4L	.0050	32.64	CGR743U040X4L3PH
84,000	X5C	.0044	36.73	CGR843U040X5C3PH
95,000	X5L	.0039	41.00	CGR953U040X5L3PH

### 50 WVDC; 75 VDC Surge

2,300	R1N	.0717	3.75	CGR232U050R1N3PH
3,400	R2C	.0485	4.57	CGR342U050R2C3PH
5,000	R2L	.0330	6.72	CGR502U050R2L3PH
6,600	R3C	.0250	7.65	CGR662U050R3C3PH
7,700	R3L	.0214	9.00	CGR772U050R3L3PH
9,300	R4C	.0177	10.60	CGR932U050R4C3PH
10,000	R4L	.0165	11.97	CGR103U050R4L3PH
12,000	R5C	.0137	13.37	CGR123U050R5C3PH
13,000	R5L	.0126	14.68	CGR133U050R5L3PH
6,400	U2C	.0273	7.00	CGR642U050U2C3PH
9,300	U2L	.0188	10.00	CGR932U050U2L3PH
12,000	U3C	.0145	11.80	CGR123U050U3C3PH
14,000	U3L	.0125	13.33	CGR143U050U3L3PH
17,000	U4C	.0102	15.87	CGR173U050U4C3PH
20,000	U4L	.0087	17.74	CGR203U050U4L3PH
22,000	U5C	.0079	20.13	CGR223U050U5C3PH
25,000	U5L	.0070	21.86	CGR253U050U5L3PH
8,900	V2C	.0213	9.07	CGR892U050V2C3PH
12,000	V2L	.0158	11.68	CGR123U050V2L3PH
16,000	V3C	.0118	13.86	CGR163U050V3C3PH
19,000	V3L	.0100	16.59	CGR193U050V3L3PH
23,000	V4C	.0082	19.20	CGR233U050V4C3PH
27,000	V4L	.0070	21.87	CGR273U050V4L3PH
31,000	V5C	.0061	24.30	CGR313U050V5C3PH
35,000	V5L	.0054	27.18	CGR353U050V5L3PH
25,000	W3C	.0092	18.13	CGR253U050W3C3PH
30,000	W3L	.0076	20.72	CGR303U050W3L3PH
36,000	W4C	.0063	24.13	CGR363U050W4C3PH
42,000	W4L	.0054	27.76	CGR423U050W4L3PH
48,000	W5C	.0047	30.86	CGR483U050W5C3PH
55,000	W5L	.0041	34.22	CGR553U050W5L3PH
46,000	X3L	.0065	24.52	CGR463U050X3L3PH
55,000	X4C	.0054	28.53	CGR553U050X4C3PH
64,000	X4L	.0046	31.83	CGR643U050X4L3PH
74,000	X5C	.0040	35.85	CGR743U050X5C3PH
83,000	X5L	.0036	39.87	CGR833U050X5L3PH

# Type CGR

# Standard Ratings

Capacitance μF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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### 60 WVDC; 80 VDC Surge

1,800	R1N	.0916	3.29	CGR182U060R1N3PH
2,700	R2C	.0611	4.38	CGR272U060R2C3PH
3,900	R2L	.0423	5.80	CGR392U060R2L3PH
5,200	R3C	.0317	7.20	CGR522U060R3C3PH
6,100	R3L	.0270	8.40	CGR612U060R3L3PH
7,300	R4C	.0226	9.78	CGR732U060R4C3PH
8,500	R4L	.0194	11.13	CGR852U060R4L3PH
9,800	R5C	.0168	12.49	CGR982U060R5C3PH
11,000	R5L	.0150	13.84	CGR113U060R5L3PH
5,100	U2C	.0343	6.69	CGR512U060U2C3PH
7,300	U2L	.0226	9.55	CGR732U060U2L3PH
9,600	U3C	.0182	10.90	CGR962U060U3C3PH
11,000	U3L	.0159	12.56	CGR113U060U3L3PH
13,000	U4C	.0134	14.58	CGR133U060U4C3PH
15,000	U4L	.0166	16.59	CGR153U060U4L3PH
18,000	U5C	.0097	18.59	CGR183U060U5C3PH
20,000	U5L	.0087	20.58	CGR203U060U5L3PH
7,000	V2C	.0264	8.32	CGR702U060V2C3PH
10,000	V2L	.0185	10.91	CGR103U060V2L3PH
13,000	V3C	.0142	12.92	CGR133U060V3C3PH
15,000	V3L	.0123	15.55	CGR153U060V3L3PH
18,000	V4C	.0102	17.61	CGR183U060V4C3PH
21,000	V4L	.0088	20.20	CGR213U060V4L3PH
25,000	V5C	.0074	22.77	CGR253U060V5C3PH
28,000	V5L	.0066	25.33	CGR283U060V5L3PH
20,000	W3C	.0110	17.20	CGR203U060W3C3PH
24,000	W3L	.0091	19.78	CGR243U060W3L3PH
28,000	W4C	.0078	22.82	CGR283U060W4C3PH
33,000	W4L	.0066	26.28	CGR333U060W4L3PH
38,000	W5C	.0057	29.27	CGR383U060W5C3PH
43,000	W5L	.0051	32.27	CGR433U060W5L3PH
36,000	X3L	.0061	23.57	CGR363U060X3L3PH
43,000	X4C	.0051	27.47	CGR433U060X4C3PH
51,000	X4L	.0043	30.98	CGR513U060X4L3PH
58,000	X5C	.0037	34.82	CGR583U060X5C3PH
65,000	X5L	.0033	38.31	CGR653U060X5L3PH

### 75 WVDC; 100 VDC Surge

1,100	R1N	.1454	2.54	CGR112U075R1N3PH
1,700	R2C	.0941	3.66	CGR172U075R2C3PH
2,500	R2L	.0640	4.70	CGR252U075R2L3PH
3,300	R3C	.0484	5.53	CGR332U075R3C3PH
3,900	R3L	.0410	6.55	CGR392U075R3L3PH
4,600	R4C	.0347	7.32	CGR462U075R4C3PH
5,400	R4L	.0296	8.75	CGR542U075R4L3PH
6,200	R5C	.0258	9.67	CGR622U075R5C3PH
7,000	R5L	.0228	10.75	CGR702U075R5L3PH
3,200	U2C	.0515	5.46	CGR322U075U2C3PH
4,600	U2L	.0358	7.38	CGR462U075U2L3PH
6,100	U3C	.0270	8.63	CGR612U075U3C3PH

Capacitance μF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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### 75 WVDC; 100 VDC Surge

7,200	U3L	.0229	9.87	CGR722U075U3L3PH
8,600	U4C	.0191	10.43	CGR862U075U4C3PH
10,000	U4L	.0165	13.02	CGR103U075U4L3PH
11,000	U5C	.0150	14.76	CGR113U075U5C3PH
13,000	U5L	.0126	16.14	CGR133U075U5L3PH
4,400	V2C	.0386	6.82	CGR442U075V2C3PH
6,400	V2L	.0265	8.72	CGR642U075V2L3PH
8,400	V3C	.0202	10.48	CGR842U075V3C3PH
9,900	V3L	.0171	12.32	CGR992U075V3L3PH
11,000	V4C	.0154	13.22	CGR113U075V4C3PH
13,000	V4L	.0130	16.14	CGR133U075V4L3PH
15,000	V5C	.0113	18.18	CGR153U075V5C3PH
17,000	V5L	.0100	20.43	CGR173U075V5L3PH
13,000	W3C	.0142	13.97	CGR133U075W3C3PH
15,000	W3L	.0123	16.34	CGR153U075W3L3PH
18,000	W4C	.0102	19.18	CGR183U075W4C3PH
21,000	W4L	.0088	21.75	CGR213U075W4L3PH
24,000	W5C	.0077	23.87	CGR243U075W5C3PH
27,000	W5L	.0068	26.92	CGR273U075W5L3PH
23,000	X3L	.0095	20.24	CGR233U075X3L3PH
27,000	X4C	.0081	23.47	CGR273U075X4C3PH
32,000	X4L	.0068	26.89	CGR323U075X4L3PH
37,000	X5C	.0059	29.66	CGR373U075X5C3PH
41,000	X5L	.0053	32.00	CGR413U075X5L3PH

### 100 WVDC; 135 VDC Surge

300	R1N	.4166	2.00	CGR301U100R1N3PH
460	R2C	.2717	3.14	CGR461U100R2C3PH
660	R2L	.1893	3.51	CGR661U100R2L3PH
870	R3C	.1436	4.33	CGR871U100R3C3PH
1,000	R3L	.1250	5.01	CGR102U100R3L3PH
1,200	R4C	.1041	5.78	CGR122U100R4C3PH
1,400	R4L	.0892	6.55	CGR142U100R4L3PH
1,600	R5C	.0781	7.32	CGR162U100R5C3PH
1,800	R5L	.0694	8.29	CGR182U100R5L3PH
850	U2C	.1529	4.77	CGR851U100U2C3PH
1,200	U2L	.1083	5.26	CGR122U100U2L3PH
1,600	U3C	.0812	6.49	CGR162U100U3C3PH
1,800	U3L	.0722	7.51	CGR182U100U3L3PH
2,200	U4C	.0590	8.72	CGR222U100U4C3PH
2,600	U4L	.0500	9.92	CGR262U100U4L3PH
3,000	U5C	.0433	11.12	CGR302U100U5C3PH
3,400	U5L	.0382	12.48	CGR342U100U5L3PH
1,100	V2C	.1181	5.00	CGR112U100V2C3PH
1,700	V2L	.0764	6.68	CGR172U100V2L3PH
2,200	V3C	.0590	8.31	CGR222U100V3C3PH
2,600	V3L	.0500	9.57	CGR262U100V3L3PH
3,100	V4C	.0419	11.17	CGR312U100V4C3PH
3,600	V4L	.0361	12.60	CGR362U100V4L3PH
4,200	V5C	.0309	14.17	CGR422U100V5C3PH

# Type CGR

# Standard Ratings

Capacitance μF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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## 100 WVDC; 135 VDC Surge

4,700	V5L	.0276	15.75	CGR472U100V5L3PH
3,400	W3C	.0426	11.44	CGR342U100W3C3PH
4,000	W3L	.0362	13.12	CGR402U100W3L3PH
4,800	W4C	.0302	15.66	CGR482U100W4C3PH
5,600	W4L	.0258	17.37	CGR562U100W4L3PH
6,400	W5C	.0226	19.48	CGR642U100W5C3PH
7,200	W5L	.0201	21.44	CGR722U100W5L3PH
6,100	X3L	.0278	17.64	CGR612U100X3L3PH
7,300	X4C	.0232	20.37	CGR732U100X4C3PH
8,500	X4L	.0200	23.08	CGR852U100X4L3PH
9,700	X5C	.0175	25.16	CGR972U100X5C3PH
10,000	X5L	.0170	27.50	CGR103U100X5L3PH

## 150 WVDC; 185 VDC Surge

330	R1N	.3181	1.92	CGR331U150R1N3PH
500	R2C	.2100	3.02	CGR501U150R2C3PH
720	R2L	.1458	3.40	CGR721U150R2L3PH
950	R3C	.1105	4.08	CGR951U150R3C3PH
1,100	R3L	.0954	4.85	CGR112U150R3L3PH
1,300	R4C	.0807	5.45	CGR132U150R4C3PH
1,500	R4L	.0700	6.23	CGR152U150R4L3PH
1,700	R5C	.0617	6.98	CGR172U150R5C3PH
2,000	R5L	.0525	7.45	CGR202U150R5L3PH
930	U2C	.1182	4.07	CGR931U150U2C3PH
1,300	U2L	.0846	4.92	CGR132U150U2L3PH
1,700	U3C	.0647	6.00	CGR172U150U3C3PH
2,000	U3L	.0550	6.87	CGR202U150U3L3PH
2,400	U4C	.0458	8.40	CGR242U150U4C3PH
2,900	U4L	.0379	9.32	CGR292U150U4L3PH
3,300	U5C	.0333	10.64	CGR332U150U5C3PH
3,700	U5L	.0297	11.68	CGR372U150U5L3PH
1,200	V2C	.0916	4.71	CGR122U150V2C3PH
1,800	V2L	.0611	6.28	CGR182U150V2L3PH
2,400	V3C	.0458	7.70	CGR242U150V3C3PH
2,800	V3L	.0392	8.98	CGR282U150V3L3PH
3,400	V4C	.0323	10.43	CGR342U150V4C3PH
4,000	V4L	.0275	11.77	CGR402U150V4L3PH
4,500	V5C	.0244	13.21	CGR452U150V5C3PH
5,100	V5L	.0215	14.65	CGR512U150V5L3PH
3,700	W3C	.0310	10.60	CGR372U150W3C3PH
4,400	W3L	.0261	12.42	CGR442U150W3L3PH
5,200	W4C	.0221	14.46	CGR522U150W4C3PH
6,100	W4L	.0188	16.22	CGR612U150W4L3PH
7,000	W5C	.0164	18.08	CGR702U150W5C3PH
7,900	W5L	.0145	20.00	CGR792U150W5L3PH
6,600	X3L	.0196	16.44	CGR662U150X3L3PH
8,000	X4C	.0162	19.00	CGR802U150X4C3PH
9,300	X4L	.0139	21.57	CGR932U150X4L3PH
10,000	X5C	.0130	23.72	CGR103U150X5C3PH
12,000	X5L	.0183	26.00	CGR123U150X5L3PH

Capacitance μF	Case Code	Maximum ESR 120Hz/+25°C (OHMS)	Max Ripple Current 120Hz/+85°C (Amps R-M-S)	Part #
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## 200 WVDC; 250 VDC Surge

180	R1N	.3888	1.58	CGR181T200R1N3PH
270	R2C	.2592	2.08	CGR271T200R2C3PH
390	R2L	.1794	2.75	CGR391T200R2L3PH
520	R3C	.1346	3.41	CGR521T200R3C3PH
610	R3L	.1147	3.98	CGR611T200R3L3PH
730	R4C	.0958	4.62	CGR731T200R4C3PH
850	R4L	.0823	5.27	CGR851T200R4L3PH
980	R5C	.0714	5.91	CGR981T200R5C3PH
1,100	R5L	.0636	6.55	CGR112T200R5L3PH
510	U2C	.1372	3.31	CGR511T200U2C3PH
730	U2L	.0958	4.32	CGR731T200U2L3PH
960	U3C	.0729	5.35	CGR961T200U3C3PH
1,100	U3L	.0636	6.19	CGR112T200U3L3PH
1,300	U4C	.0538	7.14	CGR132T200U4C3PH
1,500	U4L	.0466	8.17	CGR152T200U4L3PH
1,800	U5C	.0388	8.89	CGR182T200U5C3PH
2,000	U5L	.0350	9.92	CGR202T200U5L3PH
700	V2C	.1000	4.05	CGR701T200V2C3PH
1,000	V2L	.0700	5.32	CGR102T200V2L3PH
1,300	V3C	.0538	6.48	CGR132T200V3C3PH
1,500	V3L	.0466	7.30	CGR152T200V3L3PH
1,800	V4C	.0388	8.64	CGR182T200V4C3PH
2,200	V4L	.0318	9.87	CGR222T200V4L3PH
2,500	V5C	.0280	11.01	CGR252T200V5C3PH
2,800	V5L	.0250	12.32	CGR282T200V5L3PH
2,000	W3C	.0350	8.99	CGR202T200W3C3PH
2,400	W3L	.0291	10.43	CGR242T200W3L3PH
2,800	W4C	.0250	12.13	CGR282T200W4C3PH
3,300	W4L	.0212	13.81	CGR332T200W4L3PH
3,800	W5C	.0184	15.49	CGR382T200W5C3PH
4,300	W5L	.0162	17.16	CGR432T200W5L3PH
3,600	X3L	.0208	14.07	CGR362T200X3L3PH
4,300	X4C	.0174	16.27	CGR432T200X4C3PH
5,100	X4L	.0147	18.45	CGR512T200X4L3PH
5,800	X5C	.0129	20.62	CGR582T200X5C3PH
6,500	X5L	.0115	22.78	CGR652T200X5L3PH

## 250 WVDC; 300 VDC Surge

150	R2C	.7900	1.35	CGR151T250R2C3PH
220	R3C	.4400	2.12	CGR221T250R3C3PH
330	R4C	.3000	2.88	CGR331T250R4C3PH
470	R5L	.2100	3.94	CGR471T250R5L3PH
820	V4C	.1300	5.45	CGR821T250V4C3PH
1,200	V5L	.0900	7.45	CGR122T250V5L3PH
1,800	W5L	.0540	10.70	CGR182T250W5L3PH
1,800	X4C	.0550	10.70	CGR182T250X4C3PH
2,700	X5L	.0390	14.30	CGR272T250X5L3PH