



GR series FOR GENERAL PURPOSE

Item	Characteristics													
Operating Temperature Range	-40~105°C							-25~105°C						
Rated Working Voltage Range	10V~100V DC							160V~450V DC						
Capacitance Tolerance (120Hz, 25°C)	±20%(M)													
Leakage Current (25°C)	10V~100V DC							160V~450V DC						
	$I \leq 0.02CV$ or 3(μA)							$I \leq 0.03CV$ or 40(μA)						
	I:Leakage Current (μA) C:Rated Capacitance (μF) V:Working Voltage (V) After 5 minutes applying the DC working voltage													
Surge Voltage (25°C)	W.V.	10	16	25	35	50	63	100	160	200	250	350	400	450
	S.V.	13	20	32	44	63	79	125	200	250	300	400	450	500
Dissipation Factor (120Hz, 25°C) (Tan.Θ)	W.V.	10	16	25	35	50	63	100	160	200	250	350	400	450
	Tan.Θ	0.20	0.17	0.15	0.12	0.10	0.10	0.20	0.20	0.20	0.20	0.20	0.24	0.24
For capacitance exceeding 1000 μF, add 0.02 per increment of 1000 μF														
Temperature Characteristics	W.V.	10	16	25	35	50	63	100	160	200	250	350	400	450
	-25°C/+25°C	4	3	3	2	2	2	2	8	8	8	12	15	16
	-40°C/+25°C	8	6	4	3	3	3	3	6	8	10	-	-	-
Impedance ration at 120Hz														
Load Test	After 1000 hours application of W.V. at +105°C the capacitor shall meet the following limits													
	Capacitance change	$\leq \pm 20\%$ of initial value												
	Tan.Θ	$\leq 150\%$ of initial specified value												
	Leakage current	\leq initial specified value												
Shelf Test	After 500 hours application of W.V. at +105°C the capacitor shall meet the following limits													
	Capacitance change	$\leq \pm 20\%$ of initial value												
	Tan.Θ	$\leq 150\%$ of initial specified value												
	Leakage current	$\leq 200\%$ of initial specified value												



ORDERING INFORMATION

OPTIONAL DIMENSIONS AND LEAD SPACING (IF NOT STANDARD)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)																																																																																																																															
S R	1 0 3	M	0 1 6	B	2 0 3 6	G	10.5																																																																																																																															
Series	Capacitance (μF)	Capacitance Tolerance (EIA Code)	Voltage Code	Packing Code	Diameter x Height (mm)	Lead Spacing	Lead Length (mm) (For lead cut only)																																																																																																																															
<table border="1"> <thead> <tr> <th>Series</th> <th>Capacitance</th> <th>Code</th> </tr> </thead> <tbody> <tr><td>SR</td><td>0.1 μF</td><td>R10</td></tr> <tr><td>SA</td><td>0.68 μF</td><td>R68</td></tr> <tr><td>GR</td><td>1.0 μF</td><td>1R0</td></tr> <tr><td>GA</td><td>6.8 μF</td><td>6R8</td></tr> <tr><td>SS</td><td>10 μF</td><td>100</td></tr> <tr><td>SK</td><td>68 μF</td><td>680</td></tr> <tr><td>SL</td><td>100 μF</td><td>101</td></tr> <tr><td>SZ</td><td>680 μF</td><td>681</td></tr> <tr><td>NR</td><td>1000 μF</td><td>102</td></tr> <tr><td>NA</td><td>6800 μF</td><td>682</td></tr> <tr><td>BA</td><td>10000 μF</td><td>103</td></tr> <tr><td>LS</td><td></td><td></td></tr> <tr><td>LB</td><td></td><td></td></tr> <tr><td>SG</td><td></td><td></td></tr> </tbody> </table>	Series	Capacitance	Code	SR	0.1 μF	R10	SA	0.68 μF	R68	GR	1.0 μF	1R0	GA	6.8 μF	6R8	SS	10 μF	100	SK	68 μF	680	SL	100 μF	101	SZ	680 μF	681	NR	1000 μF	102	NA	6800 μF	682	BA	10000 μF	103	LS			LB			SG			<table border="1"> <thead> <tr> <th>Code</th> <th>Tolerance</th> </tr> </thead> <tbody> <tr><td>K</td><td>$\pm 10\%$</td></tr> <tr><td>*M</td><td>$\pm 20\%$</td></tr> <tr><td>Q</td><td>-10 ~ +30%</td></tr> <tr><td>T</td><td>-10 ~ +50%</td></tr> </tbody> </table>	Code	Tolerance	K	$\pm 10\%$	*M	$\pm 20\%$	Q	-10 ~ +30%	T	-10 ~ +50%	<table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>Code</th> </tr> </thead> <tbody> <tr><td>10 V</td><td>010</td></tr> <tr><td>16 V</td><td>016</td></tr> <tr><td>25 V</td><td>025</td></tr> <tr><td>35 V</td><td>035</td></tr> <tr><td>50 V</td><td>050</td></tr> <tr><td>63 V</td><td>063</td></tr> <tr><td>100 V</td><td>100</td></tr> <tr><td>160 V</td><td>160</td></tr> <tr><td>200 V</td><td>200</td></tr> <tr><td>250 V</td><td>250</td></tr> <tr><td>350 V</td><td>350</td></tr> <tr><td>400 V</td><td>400</td></tr> <tr><td>450 V</td><td>450</td></tr> </tbody> </table>	Rated Voltage	Code	10 V	010	16 V	016	25 V	025	35 V	035	50 V	050	63 V	063	100 V	100	160 V	160	200 V	200	250 V	250	350 V	350	400 V	400	450 V	450	<table border="1"> <thead> <tr> <th>Code</th> <th>Packing Form and Lead</th> </tr> </thead> <tbody> <tr><td>B</td><td>Bulk</td></tr> <tr><td>A</td><td>Ammo Taping</td></tr> <tr><td>T</td><td>Tape & Reel</td></tr> <tr><td>C</td><td>Lead cut only</td></tr> <tr><td>Z</td><td>Lead formed only</td></tr> <tr><td>F</td><td>Lead cut & formed</td></tr> <tr><td>Y</td><td>Lead kinked</td></tr> </tbody> </table>	Code	Packing Form and Lead	B	Bulk	A	Ammo Taping	T	Tape & Reel	C	Lead cut only	Z	Lead formed only	F	Lead cut & formed	Y	Lead kinked	<table border="1"> <thead> <tr> <th>Code</th> <th>Lead Spacing Denoted By "F" (mm)</th> </tr> </thead> <tbody> <tr><td>A</td><td>1.5 mm</td></tr> <tr><td>B</td><td>2.0 mm</td></tr> <tr><td>C</td><td>2.5 mm</td></tr> <tr><td>D</td><td>3.5 mm</td></tr> <tr><td>E</td><td>5.0 mm</td></tr> <tr><td>F</td><td>7.5 mm</td></tr> <tr><td>G</td><td>10.5 mm</td></tr> <tr><td>H</td><td>12.5 mm</td></tr> </tbody> </table>	Code	Lead Spacing Denoted By "F" (mm)	A	1.5 mm	B	2.0 mm	C	2.5 mm	D	3.5 mm	E	5.0 mm	F	7.5 mm	G	10.5 mm	H	12.5 mm	<table border="1"> <thead> <tr> <th colspan="2">Can be any custom length. Examples.</th> </tr> <tr> <th>Code</th> <th>Lead Length (mm)</th> </tr> </thead> <tbody> <tr><td></td><td>3.5</td></tr> <tr><td></td><td>5.0</td></tr> <tr><td></td><td>7.5</td></tr> <tr><td></td><td>10.5</td></tr> </tbody> </table>	Can be any custom length. Examples.		Code	Lead Length (mm)		3.5		5.0		7.5		10.5
Series	Capacitance	Code																																																																																																																																				
SR	0.1 μF	R10																																																																																																																																				
SA	0.68 μF	R68																																																																																																																																				
GR	1.0 μF	1R0																																																																																																																																				
GA	6.8 μF	6R8																																																																																																																																				
SS	10 μF	100																																																																																																																																				
SK	68 μF	680																																																																																																																																				
SL	100 μF	101																																																																																																																																				
SZ	680 μF	681																																																																																																																																				
NR	1000 μF	102																																																																																																																																				
NA	6800 μF	682																																																																																																																																				
BA	10000 μF	103																																																																																																																																				
LS																																																																																																																																						
LB																																																																																																																																						
SG																																																																																																																																						
Code	Tolerance																																																																																																																																					
K	$\pm 10\%$																																																																																																																																					
*M	$\pm 20\%$																																																																																																																																					
Q	-10 ~ +30%																																																																																																																																					
T	-10 ~ +50%																																																																																																																																					
Rated Voltage	Code																																																																																																																																					
10 V	010																																																																																																																																					
16 V	016																																																																																																																																					
25 V	025																																																																																																																																					
35 V	035																																																																																																																																					
50 V	050																																																																																																																																					
63 V	063																																																																																																																																					
100 V	100																																																																																																																																					
160 V	160																																																																																																																																					
200 V	200																																																																																																																																					
250 V	250																																																																																																																																					
350 V	350																																																																																																																																					
400 V	400																																																																																																																																					
450 V	450																																																																																																																																					
Code	Packing Form and Lead																																																																																																																																					
B	Bulk																																																																																																																																					
A	Ammo Taping																																																																																																																																					
T	Tape & Reel																																																																																																																																					
C	Lead cut only																																																																																																																																					
Z	Lead formed only																																																																																																																																					
F	Lead cut & formed																																																																																																																																					
Y	Lead kinked																																																																																																																																					
Code	Lead Spacing Denoted By "F" (mm)																																																																																																																																					
A	1.5 mm																																																																																																																																					
B	2.0 mm																																																																																																																																					
C	2.5 mm																																																																																																																																					
D	3.5 mm																																																																																																																																					
E	5.0 mm																																																																																																																																					
F	7.5 mm																																																																																																																																					
G	10.5 mm																																																																																																																																					
H	12.5 mm																																																																																																																																					
Can be any custom length. Examples.																																																																																																																																						
Code	Lead Length (mm)																																																																																																																																					
	3.5																																																																																																																																					
	5.0																																																																																																																																					
	7.5																																																																																																																																					
	10.5																																																																																																																																					
<table border="1"> <thead> <tr> <th colspan="2">EXAMPLES: Dimensions</th> </tr> <tr> <th>Diameter x Height (mm)</th> <th>Code</th> </tr> </thead> <tbody> <tr><td>4 x 7 mm</td><td>0407</td></tr> <tr><td>5 x 11 mm</td><td>0511</td></tr> <tr><td>6 x 7 mm</td><td>0607</td></tr> <tr><td>6 x 11 mm</td><td>0611</td></tr> <tr><td>8 x 9 mm</td><td>0809</td></tr> <tr><td>8 x 12 mm</td><td>0812</td></tr> <tr><td>10 x 17 mm</td><td>1017</td></tr> <tr><td>13 x 21 mm</td><td>1321</td></tr> <tr><td>16 x 26 mm</td><td>1626</td></tr> <tr><td>20 x 36 mm</td><td>2036</td></tr> <tr><td>22 x 41 mm</td><td>2241</td></tr> <tr><td>25 x 56 mm</td><td>2556</td></tr> </tbody> </table>								EXAMPLES: Dimensions		Diameter x Height (mm)	Code	4 x 7 mm	0407	5 x 11 mm	0511	6 x 7 mm	0607	6 x 11 mm	0611	8 x 9 mm	0809	8 x 12 mm	0812	10 x 17 mm	1017	13 x 21 mm	1321	16 x 26 mm	1626	20 x 36 mm	2036	22 x 41 mm	2241	25 x 56 mm	2556																																																																																																			
EXAMPLES: Dimensions																																																																																																																																						
Diameter x Height (mm)	Code																																																																																																																																					
4 x 7 mm	0407																																																																																																																																					
5 x 11 mm	0511																																																																																																																																					
6 x 7 mm	0607																																																																																																																																					
6 x 11 mm	0611																																																																																																																																					
8 x 9 mm	0809																																																																																																																																					
8 x 12 mm	0812																																																																																																																																					
10 x 17 mm	1017																																																																																																																																					
13 x 21 mm	1321																																																																																																																																					
16 x 26 mm	1626																																																																																																																																					
20 x 36 mm	2036																																																																																																																																					
22 x 41 mm	2241																																																																																																																																					
25 x 56 mm	2556																																																																																																																																					

ORDERING DESCRIPTION

- (1) CAPACITOR SERIES
- (2) CAPACITANCE CODE expressed in microfarads (μF) with three digit codes. The first two digits are significant ("R" indicates decimal point for under 10 μF) and the third digit represents the number of zeros to be added following the 2nd significant figure.
- (3) TOLERANCE CODE [(M) is standard]
- (4) RATED VOLTAGE in volts
- (5) PACKAGING AND LEAD CONFIGURATION CODES
- (6) SIZE (DIAMETER x HEIGHT in mm)
- (7) LEAD SPACING in mm (Not applicable for AXIAL TYPE)
- (8) LEAD LENGTH in mm (For lead cut only)

When placing an order for A-CAP ELECTROLYTIC CAPACITORS, product specifications are applied to develop part numbers as shown below:

EXAMPLE:

General purpose 1000 μF / 50 Volts / 20% / Radial Lead Cut / Lead spacing = 7.5mm / Lead Length = 7.5mm

NOTE: For Capacitance Value 1000 μF , 1 & 0 are significant digits then 2 zeros follow the 2nd significant digit = Code 102

S R **1 0 2** **M** **0 5 0** **C** **1 6 2 6** **F** **7.5**

EXAMPLE:

High temperature load 470 μF / 25 Volts / 20% Radial Type (Tape & Reel) / Lead spacing = 5.0mm

NOTE: For Capacitance Value 470 μF , 4 & 7 are significant digits then 1 zero follows the 2nd significant digit = Code 471

G R **4 7 1** **M** **0 2 5** **T** **1 0 2 1** **E**