

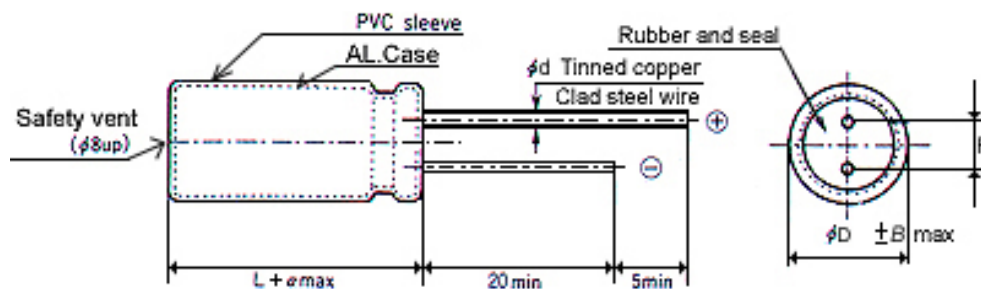


NR_{series} NON-POLARIZED AT 120HZ

Item	Characteristics																								
Operating Temperature Range	- 40~85°C																								
Rated Working Voltage Range	10V~100V DC																								
Capacitance Tolerance (120Hz,25°C)	±20% (M)																								
Leakage Current (25°C)	$I \leq 0.04CV$ or 10(μA) I: Leakage Current (μ A) C: Rated Capacitance(μF) V:Working Voltage(V) After 5 minutes applying the DC working voltage																								
Surge Voltage (25°C)	<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="text-align: center;">W.V.</td> <td style="text-align: center;">10</td> <td style="text-align: center;">16</td> <td style="text-align: center;">25</td> <td style="text-align: center;">35</td> <td style="text-align: center;">50</td> <td style="text-align: center;">63</td> <td style="text-align: center;">100</td> </tr> <tr> <td style="text-align: center;">S.V.</td> <td style="text-align: center;">13</td> <td style="text-align: center;">20</td> <td style="text-align: center;">32</td> <td style="text-align: center;">44</td> <td style="text-align: center;">63</td> <td style="text-align: center;">79</td> <td style="text-align: center;">125</td> </tr> </table>	W.V.	10	16	25	35	50	63	100	S.V.	13	20	32	44	63	79	125								
W.V.	10	16	25	35	50	63	100																		
S.V.	13	20	32	44	63	79	125																		
Dissipation Fator (120Hz,25°C) (Tan. θ)	<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="text-align: center;">W.V.</td> <td style="text-align: center;">10</td> <td style="text-align: center;">16</td> <td style="text-align: center;">25</td> <td style="text-align: center;">35</td> <td style="text-align: center;">50</td> <td style="text-align: center;">63</td> <td style="text-align: center;">100</td> </tr> <tr> <td style="text-align: center;">S.V.</td> <td style="text-align: center;">0.25</td> <td style="text-align: center;">0.20</td> <td style="text-align: center;">0.17</td> <td style="text-align: center;">0.15</td> <td style="text-align: center;">0.12</td> <td style="text-align: center;">0.12</td> <td style="text-align: center;">0.10</td> </tr> </table>	W.V.	10	16	25	35	50	63	100	S.V.	0.25	0.20	0.17	0.15	0.12	0.12	0.10								
W.V.	10	16	25	35	50	63	100																		
S.V.	0.25	0.20	0.17	0.15	0.12	0.12	0.10																		
Temperature Characteristics	<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="text-align: center;">W.V.</td> <td style="text-align: center;">10</td> <td style="text-align: center;">16</td> <td style="text-align: center;">25</td> <td style="text-align: center;">35</td> <td style="text-align: center;">50</td> <td style="text-align: center;">63</td> <td style="text-align: center;">100</td> </tr> <tr> <td style="text-align: center;">-25°C/+25°C</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">-40°C/+25°C</td> <td style="text-align: center;">6</td> <td style="text-align: center;">4</td> <td style="text-align: center;">4</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> </table> <p style="text-align: center;">Impedance ratio at 120Hz</p>	W.V.	10	16	25	35	50	63	100	-25°C/+25°C	3	2	2	2	2	2	2	-40°C/+25°C	6	4	4	3	3	2	3
W.V.	10	16	25	35	50	63	100																		
-25°C/+25°C	3	2	2	2	2	2	2																		
-40°C/+25°C	6	4	4	3	3	2	3																		

Load Test	After 1000 hours application of W.V. at +85°C the capacitor shall meet the following limits	
	Capacitance change	$\leq \pm 25\%$ of initial value
	Tan. θ	$\leq \pm 200\%$ of initial specified value
	Leakage current	\leq initial specified value
Shelf Test	After 500 hours application of W.V. at +85°C the capacitor shall meet the following limits	
	Capacitance change	$\leq 25\%$ of initial value
	Tan. θ	$\leq 200\%$ of initial specified value
	Leakage current	$\leq 200\%$ of initial specified value

NR series Dimensions



$$L \leq 16 \rightarrow \alpha = 1 \quad \phi D \leq 10 \rightarrow \beta = 0.5$$

$$L > 16 \rightarrow \alpha = 2 \quad \phi D \leq 10 \rightarrow \beta = 1.0$$

Unit(mm)

D	5	6	8	10	13	16
F±0.5	2	2.5	3.5	5	5	7.5
d±0.02	0.5	0.5	0.5	0.6	0.6	0.8

DxL (m/m)

$\mu F \setminus VV$	10		16		25		35		50		63		100	
0.47									5x11	10	5x11	10	5x11	13
1	Dimension: ϕ DxL(mm)								5x11	16	5x11	16	5x11	20
2.2	Ripple Current: mA(rms) at 120Hz 85°C								5x11	24	5x11	24	5x11	32
3.3									5x11	29	5x11	35	5x11	47
4.7									5x11	39	5x11	42	6x12	55
10					5x11	48	5x11	51	6x12	67	6x12	70	10x12	95
22			5x11	66	5x11	82	6x12	89	6x12	109	10x12	124	10x15	171
33	5x11	73	5x11	93	6x12	100	6x12	119	8x12	143	10x16	166	13x21	210
47	6x12	88	6x12	109	6x12	133	8x12	157	8x12	181	13x21	219	13x26	276
100	6x12	183	6x12	195	8x12	228	10x17	271	10x20	295	13x25	390	16x28	485



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)																																																																																																											
Series	EXAMPLES: <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Capacitance</th> <th>Code</th> </tr> <tr> <td>0.1 μF</td> <td>R10</td> </tr> <tr> <td>0.68 μF</td> <td>R68</td> </tr> <tr> <td>1.0 μF</td> <td>1R0</td> </tr> <tr> <td>6.8 μF</td> <td>6R8</td> </tr> <tr> <td>10 μF</td> <td>100</td> </tr> <tr> <td>68 μF</td> <td>680</td> </tr> <tr> <td>100 μF</td> <td>101</td> </tr> <tr> <td>680 μF</td> <td>681</td> </tr> <tr> <td>1000 μF</td> <td>102</td> </tr> <tr> <td>6800 μF</td> <td>682</td> </tr> <tr> <td>10000 μF</td> <td>103</td> </tr> </table>	Capacitance	Code	0.1 μF	R10	0.68 μF	R68	1.0 μF	1R0	6.8 μF	6R8	10 μF	100	68 μF	680	100 μF	101	680 μF	681	1000 μF	102	6800 μF	682	10000 μF	103	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Tolerance</th> </tr> <tr> <td>K</td> <td>± 10%</td> </tr> <tr> <td>*M</td> <td>± 20%</td> </tr> <tr> <td>Q</td> <td>-10 ~ +30%</td> </tr> <tr> <td>T</td> <td>-10 ~ +50%</td> </tr> </table>	Code	Tolerance	K	± 10%	*M	± 20%	Q	-10 ~ +30%	T	-10 ~ +50%	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Rated Voltage</th> <th>Code</th> </tr> <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> </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" style="width:100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Packing Form and Lead</th> </tr> <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> </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" style="width:100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Lead Spacing Denoted By "F" (mm)</th> </tr> <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> </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" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">Can be any custom length. Examples.</th> </tr> <tr> <th>Code</th> <th>Lead Length (mm)</th> </tr> <tr> <td>3.5</td> <td>3.5 mm</td> </tr> <tr> <td>5.0</td> <td>5.0 mm</td> </tr> <tr> <td>7.5</td> <td>7.5 mm</td> </tr> <tr> <td>10.5</td> <td>10.5 mm</td> </tr> </table>	Can be any custom length. Examples.		Code	Lead Length (mm)	3.5	3.5 mm	5.0	5.0 mm	7.5	7.5 mm	10.5	10.5 mm
Capacitance	Code																																																																																																																	
0.1 μF	R10																																																																																																																	
0.68 μF	R68																																																																																																																	
1.0 μF	1R0																																																																																																																	
6.8 μF	6R8																																																																																																																	
10 μF	100																																																																																																																	
68 μF	680																																																																																																																	
100 μF	101																																																																																																																	
680 μF	681																																																																																																																	
1000 μF	102																																																																																																																	
6800 μF	682																																																																																																																	
10000 μF	103																																																																																																																	
Code	Tolerance																																																																																																																	
K	± 10%																																																																																																																	
*M	± 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	3.5 mm																																																																																																																	
5.0	5.0 mm																																																																																																																	
7.5	7.5 mm																																																																																																																	
10.5	10.5 mm																																																																																																																	
EXAMPLES: Dimensions <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Diameter x Height (mm)</th> <th>Code</th> </tr> <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> </table>								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																																																																																	
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

SR 102 M 050 C 1626 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

GR 471 M 025 T 1021 E