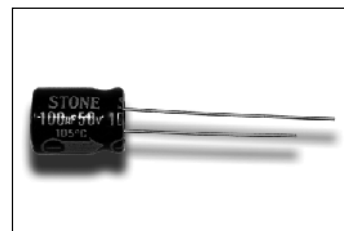




Aluminum Electrolytic Capacitors GR(HR) Series

Features

- 105°C, Standard series for general purpose
- RoHS Compliant



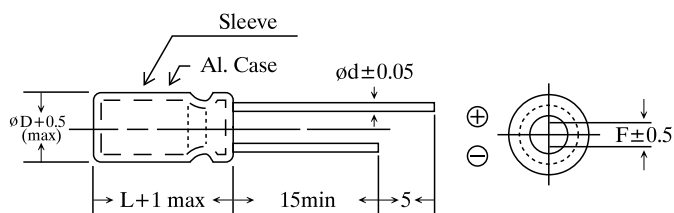
Specification

Items	Performance																								
Capacitance Tolerance	±20% (at 120Hz, 20°C)																								
Rated Voltage Range	10 to 100 VDC																								
Capacitance Range	0.1 to 1000 μF																								
Operating Temperature Range	-40 to + 105°C																								
Leakage Current (at 20°C)	$I \leq 0.01 CV$ or $3 (\mu A)$, whichever is greater. After 2 minutes application of working voltage. I = Leakage current (μA), C = Rated capacitance (μF), V = Rated voltage (V)																								
Dissipation Factor (Tan δ at 120Hz, 20°C)	<table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Tan δ (max)</td> <td>0.20</td> <td>0.17</td> <td>0.15</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> <td>0.10</td> </tr> </tbody> </table> For capacitance > 1000 μF, add 0.02 per 1000 μF increase.	Rated Voltage	10	16	25	35	50	63	100	Tan δ (max)	0.20	0.17	0.15	0.12	0.10	0.10	0.10								
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Low Temperature Characteristics (at 120Hz)	Impedance ratio max. <table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Z-25°C/Z+20°C</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Rated Voltage	10	16	25	35	50	63	100	Z-25°C/Z+20°C	3	2	2	2	2	2	2	Z-40°C/Z+20°C	8	6	4	3	3	3	3
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Load Life	After 2000 hours application of W.V. at 105°C, the capacitor shall meet the following limits. Capacitance change : $\leq \pm 25\%$ of initial value Dissipation factor : $\leq 200\%$ of initial specified value Leakage Current : \leq Initial specified value																								
Shelf Life	After storage for 1000 hours at 105°C, with no voltage applied and being stabilized at + 20°C, Capacitor shall meet the limit specified in load life.																								
Ripple Current & Frequency Multiplier	<table border="1"> <thead> <tr> <th>Freq.(Hz) \ Cap.(μF)</th> <th>60 (50)</th> <th>120</th> <th>500</th> <th>1K</th> <th>10K up</th> </tr> </thead> <tbody> <tr> <td>Under 100</td> <td>0.80</td> <td>1.00</td> <td>1.20</td> <td>1.30</td> <td>1.48</td> </tr> <tr> <td>100 to 1000</td> <td>0.80</td> <td>1.00</td> <td>1.10</td> <td>1.25</td> <td>1.35</td> </tr> </tbody> </table>	Freq.(Hz) \ Cap.(μF)	60 (50)	120	500	1K	10K up	Under 100	0.80	1.00	1.20	1.30	1.48	100 to 1000	0.80	1.00	1.10	1.25	1.35						
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Aluminum Electrolytic Capacitors GR(HR) Series

DIAGRAM OF DIMENSIONS



LEAD SPACING AND DIAMETER Unit: mm

D	5	6.3	8
F	2.0	2.5	3.5
d	0.5		

DIMENSION & PERMISSIBLE RIPPLE CURRENT

Dimension : $\phi D \times L$ (mm)

Ripple Current : mA/rms at 120Hz, 105°C

VDC μF	10V		16V		25V		35V		50V		63V		100V	
	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA
0.1-0.47									5x11.5	6	5x11.5	6	5x11.5	8
1									5x11.5	12	5x11.5	12	5x11.5	14
2.2									5x11.5	20	5x11.5	20	5x11.5	21
3.3									5x11.5	25	5x11.5	25	5x11.5	28
4.7									5x11.5	30	5x11.5	30	5x11.5	32
10			5x11.5	35	5x11.5	35	5x11.5	46	5x11.5	46	5x11.5	40	6.3x11	54
22					5x11.5	55	5x11.5	59	5x11.5	59	6.3x11	78		
33					5x11.5	66	6.3x11	87	6.3x11	87	6.3x11	96		
47			5x11.5	96	5x11.5	100	6.3x11	120	6.3x11	115	8x11	136		
100	5x11.5	90	5x11.5	100	6.3x11	138	8x11	162	8x11	188	8x14	200		
220	6.3x11	163	6.3x11	210	8x11	229	8x14	250						
330	6.3x11	200	8x11	258	8x14	290	8x16	360						
470	6.3x11	220	8x11	355	8x14	396								
1000	8x14	516	8x16	520										