

## MGK Series

### Features

- Endurance with ripple current: 105°C, 5,000 hours
- RoHS Compliance

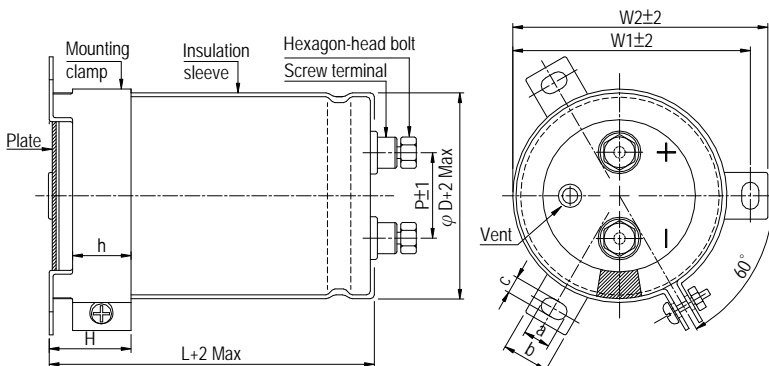


Sleeve & Marking Color: Black & Golden

### Specifications

Items	Performance												
Category Temperature Range	-40°C ~ +105°C												
Capacitance Tolerance	±20% (at 120Hz, 20°C)												
Leakage Current (at 20°C)	$I = 3\sqrt{CV}$ or 5 (mA) whichever is smaller (after 5 minutes) Where, C= rated capacitance in $\mu\text{F}$ V = rated DC working voltage in V												
Dissipation Factor (Tan $\delta$ at 120 Hz, 20°C)	See the Dimensions & Permissible Ripple Current												
Low Temperature Characteristics (at 120Hz)	Capacitance change : $C(-25^\circ\text{C}) / C(+20^\circ\text{C}) \geq 0.7$												
Endurance	<table border="1"> <tr> <td>Test Time</td> <td>5,000 Hrs</td> </tr> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </table> <p>* The above Specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with rated ripple current applied for 5,000 hours at 105°C.</p>	Test Time	5,000 Hrs	Capacitance Change	Within ±20% of initial value	Dissipation Factor	Less than 200% of specified value	Leakage Current	Within specified value				
Test Time	5,000 Hrs												
Capacitance Change	Within ±20% of initial value												
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Shelf Life Test	<table border="1"> <tr> <td>Test Time</td> <td>1,000 Hrs</td> </tr> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </table> <p>* The above Specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. The rated voltage shall be applied to the capacitors before the measurements (Refer to JIS C 5101-4 4.1).</p>	Test Time	1,000 Hrs	Capacitance Change	Within ±20% of initial value	Dissipation Factor	Less than 200% of specified value	Leakage Current	Within specified value				
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Ripple Current & Frequency Multipliers	<table border="1"> <tr> <td>Frequency (Hz)</td> <td>50 / 60</td> <td>100 / 120</td> <td>300</td> <td>1k</td> <td>10k up</td> </tr> <tr> <td>Multiplier</td> <td>0.7</td> <td>1.0</td> <td>1.1</td> <td>1.3</td> <td>1.4</td> </tr> </table>	Frequency (Hz)	50 / 60	100 / 120	300	1k	10k up	Multiplier	0.7	1.0	1.1	1.3	1.4
Frequency (Hz)	50 / 60	100 / 120	300	1k	10k up								
Multiplier	0.7	1.0	1.1	1.3	1.4								
Ripple Current & Temperature Multipliers	<table border="1"> <tr> <td>Temperature (°C)</td> <td>40</td> <td>60</td> <td>85</td> <td>105</td> </tr> <tr> <td>Multiplier</td> <td>2.44</td> <td>2.16</td> <td>2.00</td> <td>1.00</td> </tr> </table>	Temperature (°C)	40	60	85	105	Multiplier	2.44	2.16	2.00	1.00		
Temperature (°C)	40	60	85	105									
Multiplier	2.44	2.16	2.00	1.00									
Failure percentage	≤ 3% (During useful life)												
Failure rate	70 fit (70 10 <sup>-9</sup> /h)												

### Diagram of Dimensions



Unit: mm

φ D	P	W1	W2	H	h	a	b	c
51	22.0	61.0	65.5	21.0	15.0	7.0	12.0	4.5
64	28.6	72.5	78.0	25.0	20.0	7.0	14.0	4.5
77	32.0	85.5	91.0	35.0	20.0	8.0	16.0	4.5
90	32.0	101	106	34.5	20.0	8.0	16.0	5.0

Screw Specifications:  
 Plus hexagon-headed screw: M5×0.8×10  
 Max. screw tightening torque: 3.23Nm



Dimension & Permissible Ripple Current

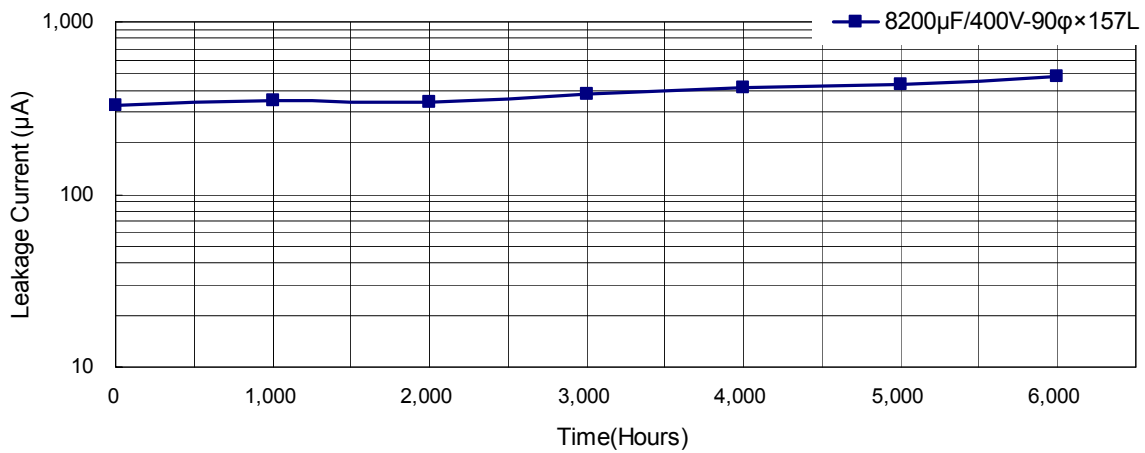
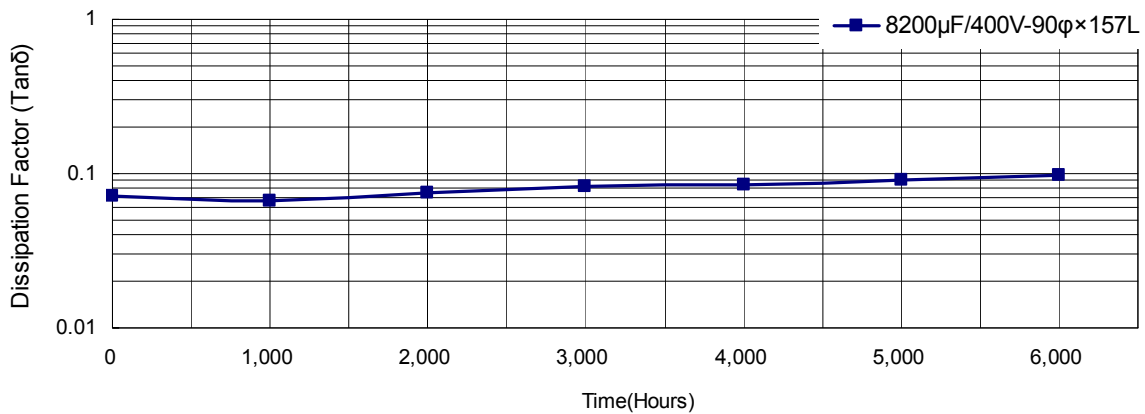
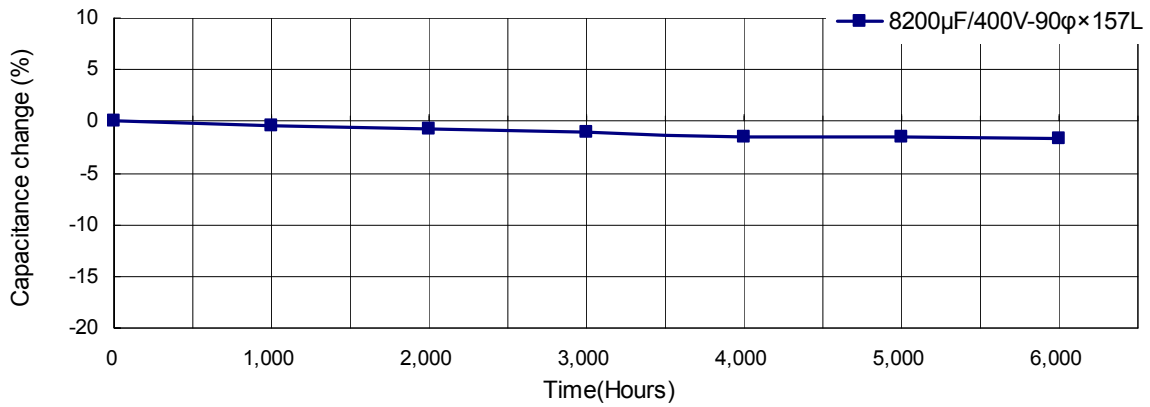
Working Voltage V <sub>DC</sub>	Capacitance 120Hz, 20°C μF	φ D×L mm	Ripple Current 120 Hz, 105°C A/rms	Tan δ at 120Hz, 20°C	ESR 120Hz, 20°C mΩ	LC 5 minutes mA	Part Number
350	1,000	51 × 75	3.9	0.15	199	1.77	MGK102M2V--B075
	1,200	51 × 75	4.2	0.15	166	1.94	MGK122M2V--B075
	1,500	51 × 96	5.2	0.15	133	2.17	MGK152M2V--B096
	1,800	51 × 96	5.7	0.15	111	2.38	MGK182M2V--B096
	2,200	51 × 130	7.1	0.15	90.5	2.63	MGK222M2V--B130
	2,700	64 × 96	7.7	0.15	73.7	2.92	MGK272M2V--C096
	3,300	64 × 115	9.1	0.15	60.3	3.22	MGK332M2V--C115
	3,900	64 × 130	10.4	0.15	51.0	3.50	MGK392M2V--C130
	4,700	64 × 155	12.2	0.15	42.3	3.85	MGK472M2V--C155
	4,700	77 × 115	11.5	0.15	42.3	3.85	MGK472M2V--D115
	5,600	77 × 130	13.1	0.15	35.5	4.20	MGK562M2V--D130
	6,800	77 × 155	15.5	0.15	29.3	4.63	MGK682M2V--D155
	8,200	90 × 157	18.1	0.15	24.3	5.00	MGK822M2V--E157
10,000	90 × 157	19.9	0.15	19.9	5.00	MGK103M2V--E157	
400	1,000	51 × 75	3.9	0.15	199	1.90	MGK102M2G--B075
	1,200	51 × 96	4.6	0.15	166	2.08	MGK122M2G--B096
	1,500	51 × 115	5.6	0.15	133	2.32	MGK152M2G--B115
	1,800	51 × 130	6.4	0.15	111	2.55	MGK182M2G--B130
	2,200	64 × 96	6.9	0.15	90.5	2.81	MGK222M2G--C096
	2,700	64 × 115	8.2	0.15	73.7	3.12	MGK272M2G--C115
	3,300	64 × 130	9.5	0.15	60.3	3.45	MGK332M2G--C130
	3,900	64 × 155	11.1	0.15	51.0	3.75	MGK392M2G--C155
	3,900	77 × 115	10.4	0.15	51.0	3.75	MGK392M2G--D115
	4,700	77 × 130	12.0	0.15	42.3	4.11	MGK472M2G--D130
	5,600	77 × 155	14.0	0.15	35.5	4.49	MGK562M2G--D155
	6,800	90 × 157	16.5	0.15	29.3	4.95	MGK682M2G--E157
	8,200	90 × 157	18.1	0.15	24.3	5.00	MGK822M2G--E157
450	1,000	51 × 96	4.2	0.15	199	2.01	MGK102M2W--B096
	1,200	51 × 115	5.0	0.15	166	2.20	MGK122M2W--B115
	1,500	51 × 130	5.9	0.15	133	2.46	MGK152M2W--B130
	1,800	64 × 96	6.3	0.15	111	2.70	MGK182M2W--C096
	2,200	64 × 115	7.4	0.15	90.5	2.98	MGK222M2W--C115
	2,700	64 × 130	8.6	0.15	73.7	3.31	MGK272M2W--C130
	2,700	77 × 115	8.7	0.15	73.7	3.31	MGK272M2W--D115
	3,300	64 × 155	10.2	0.15	60.3	3.66	MGK332M2W--C155
	3,300	77 × 130	10.1	0.15	60.3	3.66	MGK332M2W--D130
	3,900	77 × 155	11.7	0.15	51.0	3.97	MGK392M2W--D155
	4,700	77 × 155	12.9	0.15	42.3	4.36	MGK472M2W--D155
	5,600	90 × 157	14.9	0.15	35.5	4.76	MGK562M2W--E157

Part Numbering System

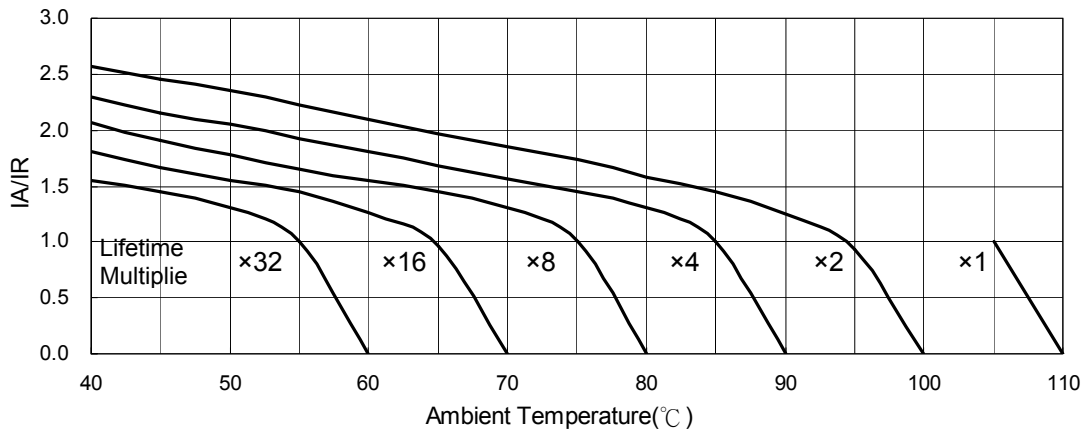
MGK series	1000μF	±20%	350V	Plain case + Mounting clamp	M5 Post	51 φ × 75L	Pb-free Terminal + PVC Sleeve
<b>MGK</b>	<b>102</b>	<b>M</b>	<b>2V</b>	<b>=</b>	<b>=</b>	<b>B075</b>	
Series name	Capacitance	Capacitance tolerance	Rated voltage	Case Type	Terminal type	Case size	Terminal and Sleeve Type
Example:	Example:	Example:	Example:	Example:	Example:	Example:	Example:
Cap. Symbol	Symbol	M = ±20% K = ±10%	WV Symbol			φ D×L Code	
1,000 102			350 2V			64×115 C115	
3,300 332			400 2G			77×130 D130	
10,000 103			450 2W			90×157 E157	

Note: For more details, please refer to "Part Numbering System (Screw Type)" on page 14.

## Typical Endurance Curves



## Useful Life Chart



IA: Actual ripple current      IR: Rated ripple current