

# HM series

## Features

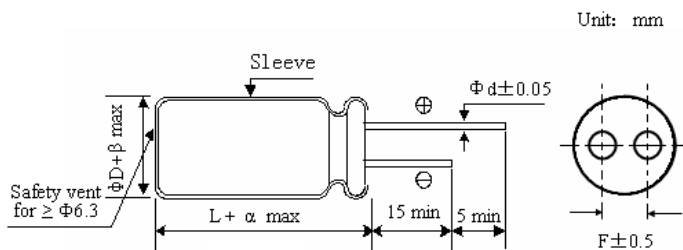
- ◆ High ripple current, High temperature, 2000 hours at 115°C.
- ◆ Ideally suited for switching power supplies .
- ◆ RoHS Compliant .



## Specifications

Item	Performance Characteristics						
Temperature Range	-25~+115°C						
Rated Voltage Range	400~450Vdc						
Capacitance Range	4.7~100μF						
Capacitance Tolerance	±20% (120Hz, +20°C)						
Leakage Current (+20°C,max.)	I≤0.02CV+30 (μA) After 5 minutes, whichever is greater measured with rated working voltage applied						
Dissipation Factor (tgδ) 120Hz, +20°C	<table border="1"> <tr> <td>Working Voltage(Vdc)</td> <td>400</td> <td>450</td> </tr> <tr> <td>D.F.(%)max.</td> <td>20</td> <td>24</td> </tr> </table>	Working Voltage(Vdc)	400	450	D.F.(%)max.	20	24
	Working Voltage(Vdc)	400	450				
D.F.(%)max.	20	24					
For capacitance>1000μF , Add 2% per another 1000μF (120Hz, +20°C)							
Low Temperature Characteristics(120Hz)	Impedance ratio max.						
	<table border="1"> <tr> <td>Working Voltage(Vdc)</td> <td>400</td> <td>450</td> </tr> <tr> <td>Z-25°C/ Z+20°C</td> <td>6</td> <td>8</td> </tr> </table>	Working Voltage(Vdc)	400	450	Z-25°C/ Z+20°C	6	8
Working Voltage(Vdc)	400	450					
Z-25°C/ Z+20°C	6	8					
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 115°C						
	<table border="1"> <tr> <td>Capacitance Change</td> <td>≤±20% of the initial value</td> </tr> <tr> <td>D.F.( tgδ)</td> <td>≤300% of the initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>≤The initial specified value</td> </tr> </table>	Capacitance Change	≤±20% of the initial value	D.F.( tgδ)	≤300% of the initial specified value	Leakage Current	≤The initial specified value
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D.F.( tgδ)	≤300% of the initial specified value						
Leakage Current	≤The initial specified value						
Shelf Life	After storing the capacitors under no load at 115°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C.						
	<table border="1"> <tr> <td>Capacitance Change</td> <td>≤±20% of the initial value</td> </tr> <tr> <td>D.F.( tgδ)</td> <td>≤200% of the initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>≤200% The initial specified value</td> </tr> </table>	Capacitance Change	≤±20% of the initial value	D.F.( tgδ)	≤200% of the initial specified value	Leakage Current	≤200% The initial specified value
	Capacitance Change	≤±20% of the initial value					
D.F.( tgδ)	≤200% of the initial specified value						
Leakage Current	≤200% The initial specified value						
Others	JISC-5101(IEC 60384)						

## Diagram of Dimensions



## Frequency Multipliers

μF \ Hz	50/60	120	300	1K	≥10K
≤ 100	0.80	1.00	1.25	1.40	1.60

ΦD	8	10	13	16	18
F	3.5	5.0	5.0	7.5	7.5
Φd	0.5	0.6	0.6	0.8	0.8
α	(L < 20) + 1.5		(L ≥ 20) + 2.0		
β	(D < 20) + 0.5		(D ≥ 20) + 1.0		

**HM series****Standard Ratings**

Voltage	400		450	
Cap( $\mu$ F)	Case Size	Ripple Current	Case Size	Ripple Current
<b>4.7</b>	8×14	50	10×13	53
<b>6.8</b>	10×13	65	10×17	70
<b>10</b>	10×17	90	10×20	90
<b>15</b>	13×17	130	13×17	120
<b>22</b>	13×20	165	13×20	160
<b>33</b>	16×20	230	16×20	220
<b>47</b>	16×25	305	16×25	290
<b>68</b>	18×25	390	18×30	400
<b>100</b>	18×30	510	18×35	520

Max Allowable Ripple Current (mA,rms) at 115°C 120Hz,Case Size  $\Phi$ D×L(mm).

Above size is the standard size for our product. If you need special size please contact our sales offices.