

## HF Series

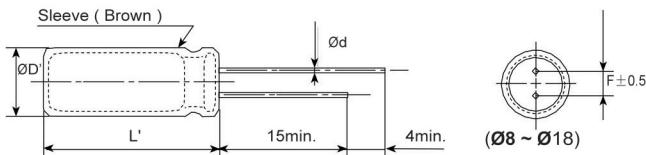
- 105°C Long Life, High ripple current, For Power Supply
- Endurance: 105°C 5000~8000hours
- RoHS Compliant



### ◆ SPECIFICATIONS

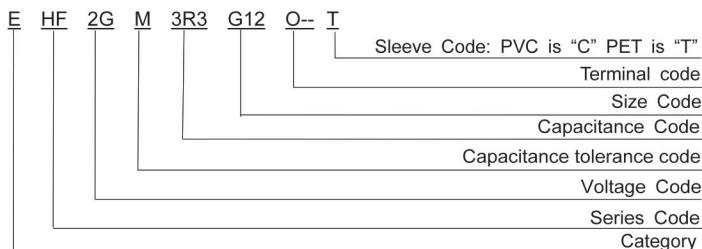
Items	Characteristics																				
Category Temperature Range	-25 to +105°C																				
Rated Voltage Range	160 to 450V <sub>dc</sub>																				
Capacitance Tolerance	$\pm 20\%$ (M)																				
Leakage Current	<table border="1"> <tr> <th></th> <th>After 1 minutes</th> <th>After 5 minutes</th> </tr> <tr> <td>CV ≤ 1000</td> <td><math>I \leq 0.1CV + 40 \mu A</math></td> <td><math>I \leq 0.03CV + 15 \mu A</math></td> </tr> <tr> <td>CV &gt; 1000</td> <td><math>I \leq 0.04CV + 100 \mu A</math></td> <td><math>I \leq 0.02CV + 25 \mu A</math></td> </tr> </table>								After 1 minutes	After 5 minutes	CV ≤ 1000	$I \leq 0.1CV + 40 \mu A$	$I \leq 0.03CV + 15 \mu A$	CV > 1000	$I \leq 0.04CV + 100 \mu A$	$I \leq 0.02CV + 25 \mu A$					
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Dissipation Factor (tanδ)	<table border="1"> <tr> <td>Rated voltage (V<sub>dc</sub>)</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td>tanδ (Max.)</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> </tr> </table>							Rated voltage (V <sub>dc</sub> )	160	200	250	350	400	450	tanδ (Max.)	0.15	0.15	0.15	0.20	0.20	0.20
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Low Temperature Characteristics (Max. Impedance Ratio)	<table border="1"> <tr> <td>Rated voltage (V<sub>dc</sub>)</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td><math>Z(-25^\circ C)/Z(+20^\circ C)</math></td> <td>3</td> <td>3</td> <td>3</td> <td>6</td> <td>6</td> <td>6</td> </tr> </table>							Rated voltage (V <sub>dc</sub> )	160	200	250	350	400	450	$Z(-25^\circ C)/Z(+20^\circ C)$	3	3	3	6	6	6
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Endurance	<p>The following specification shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C.</p> <table border="1"> <tr> <td>Capacitance change</td> <td><math>\leq \pm 20\%</math> of the initial value</td> </tr> <tr> <td>D.F. (tanδ)</td> <td><math>\leq 200\%</math> of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td><math>\leq</math> The initial specified value</td> </tr> </table>							Capacitance change	$\leq \pm 20\%$ of the initial value	D.F. (tanδ)	$\leq 200\%$ of the initial specified value	Leakage current	$\leq$ The initial specified value								
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Shelf Life	<p>The following 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.</p> <table border="1"> <tr> <td>Capacitance change</td> <td><math>\leq \pm 20\%</math> of the initial value</td> </tr> <tr> <td>D.F. (tanδ)</td> <td><math>\leq 200\%</math> of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td><math>\leq 200\%</math> of the initial specified value</td> </tr> </table>							Capacitance change	$\leq \pm 20\%$ of the initial value	D.F. (tanδ)	$\leq 200\%$ of the initial specified value	Leakage current	$\leq 200\%$ of the initial specified value								
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### ◆ DIMENSIONS [mm]



ØD	8	10	12.5	16	18
Ød	0.5	0.6	0.6	0.8	0.8
F	3.5	5.0	5.0	7.5	7.5
ØD'	$\emptyset D + 0.5$ max.				
L'	L + 2max.				

### ◆ PART NUMBER SYSTEM



※Sleeve code and Terminal Code should follow the part number system

### ◆ RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Freq.(Hz) Cap(μF)	120	1K	10K	100K
Cap. < 100	1.0	1.75	2.25	2.50
Cap. ≥ 100	1.0	1.67	2.05	2.25

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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