

Data Sheet

Customer : _____

Product : Conductive Polymer Hybrid Aluminum Electrolytic Capacitors
SMD Type, High Temperature, 150°C 1,000Hours – HHMW Series

Size : 8x10mm ~ 10x10.5mm

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Edition : Ver.1

Record of change

Date	Ver.	Description	Page

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01-Sep.-2025	01-Sep.-2025	01-Sep.-2025	
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CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

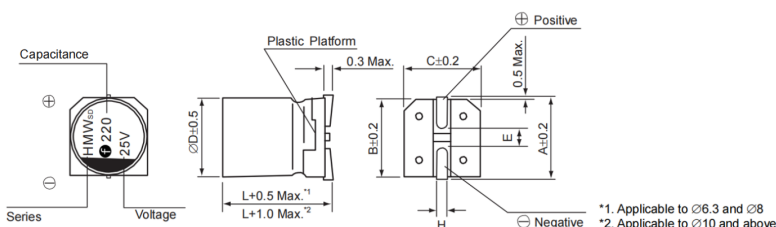
SMD Type, 150°C High Temperature

- High reliability and high voltage realized by hybrid electrolyte
- Endurance: 1,000 hours at 150°C
- Rated Voltage : 25V ~ 63V
- Rated capacitance : 33 ~ 270 μ F
- For high temperature & reliability applications.

SPECIFICATIONS

Item	Performance Characteristics															
Operating Temperature range	-55 + 150°C															
Rated Voltage Range	25V ~ 63V															
Capacitance Tolerance	± 20% (at 120 Hz/ 20°C)															
Leakage Current	I ≤ 0.01 CV or less (2 minutes , 20°C) Not greater than the formula above after 2 minutes voltage applied. I : Leakage current (μA) C : Capacitance (μF) V : Voltage(VDC)															
Dissipation Factor (tan δ)	Rated voltage(V)	25	35	50	63	(20°C · 120 Hz)										
	tan δ (Max.)	0.14	0.12	0.10	0.08											
Temperature Characteristics (Impedance ratio at 100 KHz)	Z (-25°C)/ Z (+20°C) < 2.0 Z (-55°C)/ Z (+20°C) < 2.5															
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 1,000 hours at 150°C. <table><tr><td>Capacitance change</td><td>≤ ± 30% of the initial value</td></tr><tr><td>D. F. (Tan δ)</td><td>≤ 200% of initial specified value</td></tr><tr><td>ESR</td><td>≤ 200% of initial specified value</td></tr><tr><td>Leakage current</td><td>Initial specified value or less</td></tr></table>						Capacitance change	≤ ± 30% of the initial value	D. F. (Tan δ)	≤ 200% of initial specified value	ESR	≤ 200% of initial specified value	Leakage current	Initial specified value or less		
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D. F. (Tan δ)	≤ 200% of initial specified value															
ESR	≤ 200% of initial specified value															
Leakage current	Initial specified value or less															
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 150°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to item 4.1 of JIS C 5101-4. <table><tr><td>Capacitance change</td><td>≤ ± 30% of the initial value</td></tr><tr><td>D. F. (Tan δ)</td><td>≤ 200% of initial specified value</td></tr><tr><td>ESR</td><td>≤ 200% of initial specified value</td></tr><tr><td>Leakage current</td><td>Initial specified value or less</td></tr></table>						Capacitance change	≤ ± 30% of the initial value	D. F. (Tan δ)	≤ 200% of initial specified value	ESR	≤ 200% of initial specified value	Leakage current	Initial specified value or less		
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ESR	≤ 200% of initial specified value															
Leakage current	Initial specified value or less															
Bias Humidity Test	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to the DC rated voltage at 85°C, 85% RH for 2,000 hours. <table><tr><td>Capacitance change</td><td>≤ ± 30% of the initial value</td></tr><tr><td>D. F. (Tan δ)</td><td>≤ 200% of initial specified value</td></tr><tr><td>ESR</td><td>≤ 200% of initial specified value</td></tr><tr><td>Leakage current</td><td>Initial specified value or less</td></tr><tr><td>Appearance</td><td>No significant damage</td></tr></table>						Capacitance change	≤ ± 30% of the initial value	D. F. (Tan δ)	≤ 200% of initial specified value	ESR	≤ 200% of initial specified value	Leakage current	Initial specified value or less	Appearance	No significant damage
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D. F. (Tan δ)	≤ 200% of initial specified value															
ESR	≤ 200% of initial specified value															
Leakage current	Initial specified value or less															
Appearance	No significant damage															
Resistance to Soldering heat	The following specifications shall be satisfied when the capacitors are restored to 20°C after the soldering. <table><tr><td>Capacitance change</td><td>≤ ± 10% of the initial value</td></tr><tr><td>D. F. (Tan δ)</td><td>≤ the initial specified value</td></tr><tr><td>Leakage current</td><td>≤ the initial specified value</td></tr></table>						Capacitance change	≤ ± 10% of the initial value	D. F. (Tan δ)	≤ the initial specified value	Leakage current	≤ the initial specified value				
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Dimension



ϕD	L	A	B	C	H	E
8	10.0	8.3	8.3	9	0.7~1.1	3.1
10	10.5	10.3	10.3	11	0.7~1.1	4.5

CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

■ Part Numbering (example: 100 μ F 50V 10x10.5mm)

<u>HHMW</u>	<u>101</u>	<u>M</u>	<u>1H</u>	<u>C</u>	<u>R</u>	<u>E</u>	<u>105</u>	<u>S</u>
SERIES	CAPACITANCE	TOL.	W.V.	TYPE	LEAD	DIA.	LENGTH	PRINTING COLOR

■ Standard Products Table

Rated voltage (V.DC)	Rated Capacitance (μF)	Case Size D x L (mm)	tan δ	ESR (mΩ max. 20°C/100 KHz)	Rated ripple current (mA rms/150°C,100KHz)
25 (1E)	150	8 x 10	0.14	27	1,100
	270	10 x 10.5	0.14	20	1,300
35 (1V)	100	8 x 10	0.12	30	1,050
	150	10 x 10.5	0.12	23	1,250
50 (1H)	56	8 x 10	0.10	35	950
	100	10 x 10.5	0.10	28	1,100
63 (1J)	33	8 x 10	0.08	40	720
	56	10 x 10.5	0.08	30	950

■ **Frequency coefficient of allowable ripple current**

Frequency	120 Hz < f < 1 KHz	1 KHz < f < 10 KHz	10 KHz < f < 100 KHz	100 KHz < f < 300 KHz
Coefficient	0.20	0.40	0.70	1.00