

# FPCAP Functional Polymer Aluminum Solid Electrolytic Capacitors

## HS & HA series

### Features

By using Functional Polymer cathode, Frequency & Temp. characteristics are greatly improved.

- Low ESR at a high frequency range.
- High ripple current capability.
- Long life and high reliability.

### Applications

- Switching Power Supply and DC/DC Converter.
- Buck up Power Supplies of CPU (VRM etc.)
- Miniature high Power Supply.

### Environmental Correspondence

- Any environmental hazardous substances are not used.
- The lead free of terminal plating (Sn 100%)

### Specifications

Items	Characteristic	
<b>HS &amp; HA</b>		
Operating temp. range	-55 to +105°C	
Rated voltage range	2.5 to 16V-dc	
Capacitance range	150 to 1500μF	
Capacitance tolerance	±20% (M)	
Endurance	Test condition	105°C, rated voltage 2000Hrs.
	Capacitance	Within ±20% of initial value before test
	Leakage current	Not to exceed the initial specified value
	ESR	Not to exceed 150% of initial specified value
	tan δ	Not to exceed 150% of initial specified value
Failure Rate	0.5% / 1000Hrs. Max (60%CL)	

### Size (ESR) List

Cap. [μF]	2.5 (2.8)		4.0 (4.6)		6.3 (7.2)		10 (11.5)		16 (18.4)	
	HS	HA	HS	HA	HS	HA	HS	HA	HS	HA
150							8x6.7 (25)	8x6.7 (22)		
330						8x6.7 (9)				
390					8x6.7 (18)	8x6.7 (9)				
470						8x6.7 (9)				
560			8x6.7 (16)	8x6.7 (8)		8x7.7 (9)				
680		8x6.7 (8)		8x7.7 (8)						
820	8x11.7 (9)	8x6.7 (8)			8x11.7 (10)					
1000		8x7.7 (8)			8x11.7 (10)					
1200			8x11.7 (9)							
1500	8x11.7 (9)		8x11.7 (12)							

Large Capacitance

Low ESR

φ8

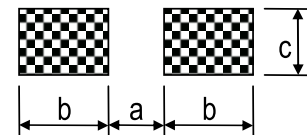
SMD

Lead-free

RoHS Compliance



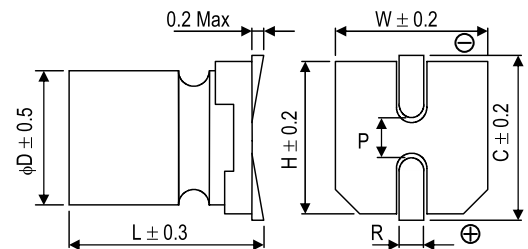
### Recommended land pattern



[Unit: mm]

φD	a	b	c
8	2.8	4.2	1.9

### Dimensions



[Unit: mm]

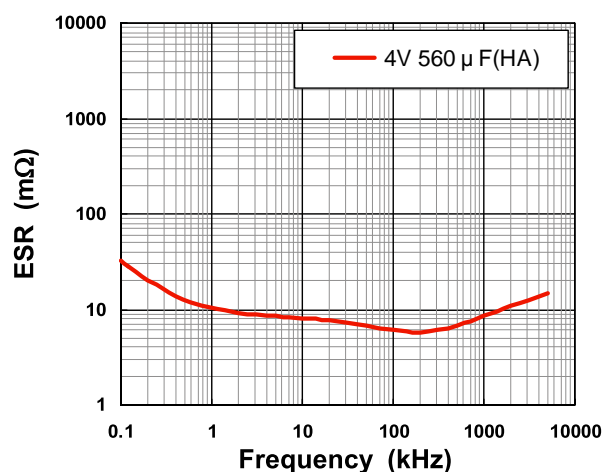
φD×L	W	H	C	R	P
8×6.7	8.3	8.3	9.0	0.8 to 1.1	3.2
8×7.7	8.3	8.3	9.0	0.8 to 1.1	3.2
8×11.7	8.3	8.3	9.0	0.8 to 1.1	3.2

## ● Part number & Specifications

Rated Voltage (V)	Rated Capacitance (μF, 120Hz)	Part Number		Leakage Current * (μA, 2 min)	tanδ (120Hz)	ESR (mΩ, 100kHz)	Rated Ripple Current (mA, r.m.s.)	Case Size φD×L(mm)
		NICHICON	FPCAP					
2.5	680	RHA0E681MCN1GS	FP-2R5ME681M-HAR	700	0.12	8	4500	8 × 6.7
	820	RHS0E821MCN1GS	FP-2R5ME821M-HSR	700	0.12	9	5400	8 × 11.7
	820	RHA0E821MCN1GS	FP-2R5ME821M-HAR	700	0.12	8	4500	8 × 6.7
	1000	RHA0E102MCN1GS	FP-2R5ME102M-HAR	750	0.12	8	4500	8 × 7.7
	1500	RHS0E152MCN1GS	FP-2R5ME152M-HSR	1125	0.12	9	5400	8 × 11.7
4.0	560	RHS0G561MCN1GS	FP-4R0ME561M-HSR	700	0.12	16	3200	8 × 6.7
	560	RHA0G561MCN1GS	FP-4R0ME561M-HAR	700	0.12	8	4500	8 × 6.7
	680	RHA0G681MCN1GS	FP-4R0ME681M-HAR	816	0.12	8	4500	8 × 7.7
	1200	RHS0G122MCN1GS	FP-4R0ME122M-HSR	1440	0.12	9	5400	8 × 11.7
	1500	RHS0G152MCN1GS	FP-4R0ME152M-HSR	1800	0.12	12	5400	8 × 11.7
6.3	330	RHA0J331MCN1GS	FP-6R3ME331M-HAR	700	0.12	9	4500	8 × 6.7
	390	RHS0J391MCN1GS	FP-6R3ME391M-HSR	737	0.12	18	3200	8 × 6.7
	390	RHA0J391MCN1GS	FP-6R3ME391M-HAR	737	0.12	9	4500	8 × 6.7
	470	RHA0J471MCN1GS	FP-6R3ME471M-HAR	888	0.12	9	4500	8 × 6.7
	560	RHA0J561MCN1GS	FP-6R3ME561M-HAR	1058	0.12	9	4500	8 × 7.7
	820	RHS0J821MCN1GS	FP-6R3ME821M-HSR	1550	0.12	10	5150	8 × 11.7
	1000	RHS0J102MCN1GS	FP-6R3ME102M-HSR	1890	0.12	10	5150	8 × 11.7
10	150	RHS1A151MCN1GS	FP-010ME151M-HSR	700	0.12	25	3000	8 × 6.7
16	150	RHA1C151MCN1GS	FP-016ME151M-HAR	700	0.12	22	3220	8 × 6.7

\* In case of some doubt about measured values, measure after applying rated voltage for 120 minutes at 105 °C.

## ● Frequency Characteristics



## ● Part Number (EX) 4V, 560μF, HA series

<b>R</b>	<b>HA</b>	<b>0G</b>	<b>561</b>	<b>M</b>	<b>CN</b>	<b>1</b>	<b>GS</b>
Type	Series name	Rated Voltage	Rated Capacitance	Capacitance Tolerance	Configuration	Control code	Taping code

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