

### Radial Lead Type

Series: NHG Type : A

Japan  
Malaysia  
China  
Taiwan



- Features Endurance: +105°C 1000 to 2000 h  
Smaller than Series NHE

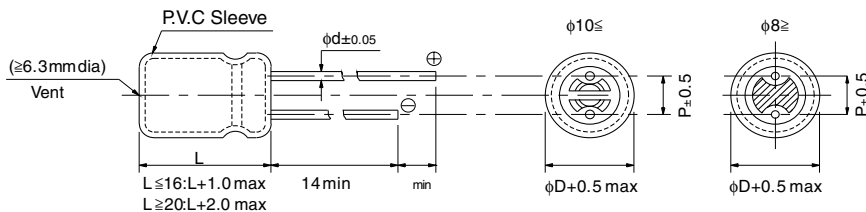
#### ■ Specifications

Category temp. range	-55 to +105°C	-25 to +105°C						
Rated W.V. Range	6.3 to 100 V.DC	160 to 450 V .DC						
Nominal Cap. Range	0.1 to 22000 μF	1.0 to 330 μ F						
Capacitance Tolerance	±20 % (120Hz/+20°C)							
DC Leakage Current	I < 0.01 CV or 3(μ A) after 2 minutes application of rated working voltage at +20°C	I < 0.06 CV + 10(μ A) after 2 minutes application of rated working voltage at +20°C						
Dissipation Factor	Please see the attached standard products list							
Endurance	<p>After following life test with DC voltage and +105±2°C ripple current value applied (The sum of DC and ripple peak voltage shall not exceed the rated working voltage), the capacitors shall meet the limits specified below.</p> <p>Duration : 6.3 to 100V.W. ; (φ5 to 8) =1000 hours , (φ10 to 18)= 2000 hours 160 to 450V.W. ; 2000 hours Post test requirements at +20 °C</p> <table border="1"> <tr> <td>Capacitance change</td> <td>±20% of initial measured value</td> </tr> <tr> <td>D.F.</td> <td>≤ 200 % of initial specified value</td> </tr> <tr> <td>DC leakage current</td> <td>≤ initial specified value</td> </tr> </table>		Capacitance change	±20% of initial measured value	D.F.	≤ 200 % of initial specified value	DC leakage current	≤ initial specified value
Capacitance change	±20% of initial measured value							
D.F.	≤ 200 % of initial specified value							
DC leakage current	≤ initial specified value							
Shelf Life	After storage for 1000 hours at +105±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in "Endurance".(With voltage treatment)							

#### ■ Frequency correction factor for ripple current

W.V. (V.DC)	Cap. (μF)	Frequency(Hz)				
		60	120	1k	10k	100k
6.3 to 100	0.1 to 33	0.75	1	1.55	1.80	2.00
	47 to 470	0.80	1	1.35	1.50	1.50
	1000 to 22000	0.85	1	1.10	1.15	1.15
160 to 450	1 to 330	0.80	1	1.35	1.50	1.50

#### ■ Dimensions in mm (not to scale)



Body Dia. φD	5	6.3	8	10	12.5	16	18
Lead Dia. φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
Lead space P	2.0	2.5	3.5	5.0	5.0	7.5	7.5

### ■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification			Lead Length				Part No.	Min. Packaging Q'ty	
		Dia. (mm)	Length (mm)	Ripple current (120Hz) (+105°C) (mA)	D.F. (120Hz) (+20°C)	Endurance (hours)	Lead Dia. (mm)	Lead Space				Straight Leads (pcs)	Taping (pcs)
								Straight (mm)	Taping *B (mm)	Taping *i (mm)			
6.3	220	5	11	140	0.28	1000	0.5	2.0	5.0	2.5	ECA0JHG221( )	200	2000
	470	6.3	11.2	230	0.28	1000	0.5	2.5	5.0	2.5	ECA0JHG471( )	200	2000
	1000	8	11.5	380	0.28	1000	0.6	3.5	5.0		ECA0JHG102( )	200	1000
	2200	10	16	710	0.30	2000	0.6	5.0	5.0		ECA0JHG222( )	200	500
	3300	10	20	840	0.32	2000	0.6	5.0	5.0		ECA0JHG332( )	200	500
	4700	12.5	20	1090	0.34	2000	0.6	5.0	5.0		ECA0JHG472( )	200	500
	6800	12.5	25	1350	0.38	2000	0.6	5.0	5.0		ECA0JHG682( )	200	500
	10000	16	25	1650	0.46	2000	0.8	7.5	7.5		ECA0JHG103( )	100	250
	15000	16	31.5	2010	0.56	2000	0.8	7.5			ECA0JHG153	100	
22000	18	35.5	2350	0.70	2000	0.8	7.5			ECA0JHG223	50		
10	330	6.3	11.2	200	0.24	1000	0.5	2.5	5.0	2.5	ECA1AHG331( )	200	2000
	470	8	11.5	250	0.24	1000	0.6	3.5	5.0		ECA1AHG471( )	200	1000
	1000	10	12.5	460	0.24	2000	0.6	5.0	5.0		ECA1AHG102( )	200	500
	2200	10	20	760	0.26	2000	0.6	5.0	5.0		ECA1AHG222( )	200	500
	3300	12.5	20	1000	0.28	2000	0.6	5.0	5.0		ECA1AHG332( )	200	500
	4700	12.5	25	1260	0.30	2000	0.6	5.0	5.0		ECA1AHG472( )	200	500
	6800	16	25	1570	0.34	2000	0.8	7.5	7.5		ECA1AHG682( )	100	250
	10000	16	31.5	1890	0.42	2000	0.8	7.5			ECA1AHG103	100	
	15000	18	35.5	2180	0.52	2000	0.8	7.5			ECA1AHG153	50	
16	100	5	11	110	0.20	1000	0.5	2.0	5.0	2.5	ECA1CHG101( )	200	2000
	220	6.3	11.2	180	0.20	1000	0.5	2.5	5.0	2.5	ECA1CHG221( )	200	2000
	330	8	11.5	260	0.20	1000	0.6	3.5	5.0		ECA1CHG331( )	200	1000
	470	8	11.5	310	0.20	1000	0.6	3.5	5.0		ECA1CHG471( )	200	1000
	1000	10	16	560	0.20	2000	0.6	5.0	5.0		ECA1CHG102( )	200	500
	2200	12.5	20	920	0.22	2000	0.6	5.0	5.0		ECA1CHG222( )	200	500
	3300	12.5	25	1170	0.24	2000	0.6	5.0	5.0		ECA1CHG332( )	200	500
	4700	16	25	1480	0.26	2000	0.8	7.5	7.5		ECA1CHG472( )	100	250
	6800	16	31.5	1780	0.30	2000	0.8	7.5			ECA1CHG682	100	
10000	18	35.5	2060	0.38	2000	0.8	7.5			ECA1CHG103	50		
25	47	5	11	91	0.16	1000	0.5	2.0	5.0	2.5	ECA1EHG470( )	200	2000
	100	6.3	11.2	130	0.16	1000	0.5	2.5	5.0	2.5	ECA1EHG101( )	200	2000
	220	8	11.5	230	0.16	1000	0.6	3.5	5.0		ECA1EHG221( )	200	1000
	330	8	11.5	310	0.16	1000	0.6	3.5	5.0		ECA1EHG331( )	200	1000
	470	10	12.5	380	0.16	2000	0.6	5.0	5.0		ECA1EHG471( )	200	500
	1000	10	20	680	0.16	2000	0.6	5.0	5.0		ECA1EHG102( )	200	500
	2200	12.5	25	1090	0.18	2000	0.6	5.0	5.0		ECA1EHG222( )	200	500
	3300	16	25	1400	0.20	2000	0.8	7.5	7.5		ECA1EHG332( )	100	250
	4700	16	31.5	1750	0.22	2000	0.8	7.5			ECA1EHG472	100	
6800	18	35.5	2040	0.26	2000	0.8	7.5			ECA1EHG682	50		
35	47	5	11	90	0.14	1000	0.5	2.0	5.0	2.5	ECA1VHG470( )	200	2000
	100	6.3	11.2	150	0.14	1000	0.5	2.5	5.0	2.5	ECA1VHG101( )	200	2000
	220	8	11.5	270	0.14	1000	0.6	3.5	5.0		ECA1VHG221( )	200	1000

When requesting taped product, please put the letter "B" or "i" between the "( )". Lead wire pitch B=5mm, 7.5mm. i=2.5mm.

### ■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification			Lead Length				Part No.	Min. Packaging Qty	
		Dia. (mm)	Length (mm)	Ripple current (120Hz) (+105°C) (mA)	D.F. (120Hz) (+20°C)	Endu- rance (hours)	Lead Dia. (mm)	Lead Space				Straight Leads (pcs)	Taping (pcs)
								Straight (mm)	Taping *B (mm)	Taping *i (mm)			
35	330	10	12.5	350	0.14	2000	0.6	5.0	5.0		ECA1VHG331( )	200	500
	470	10	16	460	0.14	2000	0.6	5.0	5.0		ECA1VHG471( )	200	500
	1000	12.5	20	810	0.14	2000	0.6	5.0	5.0		ECA1VHG102( )	200	500
	2200	16	25	1260	0.16	2000	0.8	7.5	7.5		ECA1VHG222( )	100	250
	3300	16	31.5	1610	0.18	2000	0.8	7.5			ECA1VHG332	100	
	4700	18	35.5	1910	0.20	2000	0.8	7.5			ECA1VHG472	50	
50	0.1	5	11	1.1	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHG0R1( )	200	2000
	0.22	5	11	2.3	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHGR22( )	200	2000
	0.33	5	11	3.5	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHGR33( )	200	2000
	0.47	5	11	5	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHGR47( )	200	2000
	1	5	11	10	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHG010( )	200	2000
	2.2	5	11	18	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHG2R2( )	200	2000
	3.3	5	11	22	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHG3R3( )	200	2000
	4.7	5	11	26	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHG4R7( )	200	2000
	10	5	11	39	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHG100( )	200	2000
	22	5	11	65	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHG220( )	200	2000
	33	5	11	90	0.12	1000	0.5	2.0	5.0	2.5	ECA1HHG330( )	200	2000
	47	6.3	11.2	110	0.12	1000	0.5	2.5	5.0	2.5	ECA1HHG470( )	200	2000
	100	8	11.5	180	0.12	1000	0.6	3.5	5.0		ECA1HHG101( )	200	1000
	220	10	12.5	300	0.12	2000	0.6	5.0	5.0		ECA1HHG221( )	200	500
	330	10	16	410	0.12	2000	0.6	5.0	5.0		ECA1HHG331( )	200	500
470	10	20	530	0.12	2000	0.6	5.0	5.0		ECA1HHG471( )	200	500	
1000	12.5	25	950	0.12	2000	0.6	5.0	5.0		ECA1HHG102( )	200	500	
2200	16	31.5	1470	0.14	2000	0.8	7.5			ECA1HHG222	100		
3300	18	35.5	1770	0.16	2000	0.8	7.5			ECA1HHG332	50		
63	10	5	11	46	0.10	1000	0.5	2.0	5.0	2.5	ECA1JHG100( )	200	2000
	22	5	11	71	0.10	1000	0.5	2.0	5.0	2.5	ECA1JHG220( )	200	2000
	33	6.3	11.2	100	0.10	1000	0.5	2.5	5.0	2.5	ECA1JHG330( )	200	2000
	47	6.3	11.2	120	0.10	1000	0.5	2.5	5.0	2.5	ECA1JHG470( )	200	2000
	100	10	12.5	215	0.10	2000	0.6	5.0	5.0		ECA1JHG101( )	200	500
	220	10	16	335	0.10	2000	0.6	5.0	5.0		ECA1JHG221( )	200	500
	330	10	20	510	0.10	2000	0.6	5.0	5.0		ECA1JHG331( )	200	500
	470	12.5	20	640	0.10	2000	0.6	5.0	5.0		ECA1JHG471( )	200	500
	1000	16	25	930	0.10	2000	0.8	7.5	7.5		ECA1JHG102( )	100	250
2200	18	35.5	1610	0.12	2000	0.8	7.5			ECA1JHG222	50		
100	0.47	5	11	9	0.08	1000	0.5	2.0	5.0	2.5	ECA2AHGR47( )	200	2000
	1	5	11	14	0.08	1000	0.5	2.0	5.0	2.5	ECA2AHG010( )	200	2000
	2.2	5	11	21	0.08	1000	0.5	2.0	5.0	2.5	ECA2AHG2R2( )	200	2000
	3.3	5	11	31	0.08	1000	0.5	2.0	5.0	2.5	ECA2AHG3R3( )	200	2000
	4.7	5	11	38	0.08	1000	0.5	2.0	5.0	2.5	ECA2AHG4R7( )	200	2000
	10	6.3	11.2	54	0.08	1000	0.5	2.5	5.0	2.5	ECA2AHG100( )	200	2000
	22	6.3	11.2	93	0.08	1000	0.5	2.5	5.0	2.5	ECA2AHG220( )	200	2000

When requesting taped product, please put the letter "B" or "i" between the "( )". Lead wire pitch B=5mm, 7.5mm. i=2.5mm.

### ■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification			Lead Length				Part No.	Min. Packaging Qty	
		Dia. (mm)	Length (mm)	Ripple current (120Hz) (+105°C) (mA)	D.F. (120Hz) (+20°C)	Endurance (hours)	Lead Dia. (mm)	Lead Space				Straight Leads (pcs)	Taping (pcs)
								Straight (mm)	Taping *B (mm)	Taping *i (mm)			
100	33	8	11.5	130	0.08	1000	0.6	3.5	5.0		ECA2AHG330( )	200	1000
	47	10	12.5	165	0.08	2000	0.6	5.0	5.0		ECA2AHG470( )	200	500
	100	10	20	265	0.08	2000	0.6	5.0	5.0		ECA2AHG101( )	200	500
	220	12.5	25	440	0.08	2000	0.6	5.0	5.0		ECA2AHG221( )	200	500
	330	16	25	540	0.08	2000	0.8	7.5	7.5		ECA2AHG331( )	100	250
	470	16	25	715	0.08	2000	0.8	7.5	7.5		ECA2AHG471( )	100	250
	1000	18	35.5	985	0.08	2000	0.8	7.5			ECA2AHG102	50	
160	1	6.3	11.2	17	0.15	2000	0.5	2.5	5.0	2.5	ECA2CHG010( )	200	2000
	2.2	6.3	11.2	25	0.15	2000	0.5	2.5	5.0	2.5	ECA2CHG2R2( )	200	2000
	3.3	6.3	11.2	36	0.15	2000	0.5	2.5	5.0	2.5	ECA2CHG3R3( )	200	2000
	4.7	6.3	11.2	43	0.15	2000	0.5	2.5	5.0	2.5	ECA2CHG4R7( )	200	2000
	10	10	12.5	70	0.15	2000	0.6	5.0	5.0		ECA2CHG100( )	200	500
	22	10	20	130	0.15	2000	0.6	5.0	5.0		ECA2CHG220( )	200	500
	33	10	20	180	0.15	2000	0.6	5.0	5.0		ECA2CHG330( )	200	500
	47	12.5	20	220	0.15	2000	0.6	5.0	5.0		ECA2CHG470( )	200	500
	100	16	25	335	0.15	2000	0.8	7.5	7.5		ECA2CHG101( )	100	250
	220	16	31.5	540	0.15	2000	0.8	7.5			ECA2CHG221	100	
200	1	6.3	11.2	17	0.15	2000	0.5	2.5	5.0	2.5	ECA2DHG010( )	200	2000
	2.2	6.3	11.2	25	0.15	2000	0.5	2.5	5.0	2.5	ECA2DHG2R2( )	200	2000
	3.3	6.3	11.2	36	0.15	2000	0.5	2.5	5.0	2.5	ECA2DHG3R3( )	200	2000
	4.7	8	11.5	50	0.15	2000	0.6	3.5	5.0		ECA2DHG4R7( )	200	1000
	10	10	16	80	0.15	2000	0.6	5.0	5.0		ECA2DHG100( )	200	500
	22	10	20	140	0.15	2000	0.6	5.0	5.0		ECA2DHG220( )	200	500
	33	12.5	20	190	0.15	2000	0.6	5.0	5.0		ECA2DHG330( )	200	500
	47	12.5	20	220	0.15	2000	0.6	5.0	5.0		ECA2DHG470( )	200	500
	100	16	25	335	0.15	2000	0.8	7.5	7.5		ECA2DHG101( )	100	250
	220	18	31.5	575	0.15	2000	0.8	7.5			ECA2DHG221	50	
250	1	6.3	11.2	17	0.15	2000	0.5	2.5	5.0	2.5	ECA2EHG010( )	200	2000
	2.2	6.3	11.2	29	0.15	2000	0.5	2.5	5.0	2.5	ECA2EHG2R2( )	200	2000
	3.3	8	11.5	42	0.15	2000	0.6	3.5	5.0		ECA2EHG3R3( )	200	1000
	4.7	8	11.5	50	0.15	2000	0.6	3.5	5.0		ECA2EHG4R7( )	200	1000
	10	10	16	88	0.15	2000	0.6	5.0	5.0		ECA2EHG100( )	200	500
	22	12.5	20	155	0.15	2000	0.6	5.0	5.0		ECA2EHG220( )	200	500
	33	12.5	20	190	0.15	2000	0.6	5.0	5.0		ECA2EHG330( )	200	500
	47	12.5	25	230	0.15	2000	0.6	5.0	5.0		ECA2EHG470( )	200	500
	100	16	31.5	365	0.15	2000	0.8	7.5			ECA2EHG101	100	
350	1	6.3	11.2	18	0.20	2000	0.5	2.5	5.0	2.5	ECA2VHG010( )	200	2000
	2.2	8	11.5	31	0.20	2000	0.6	3.5	5.0		ECA2VHG2R2( )	200	1000
	3.3	10	12.5	38	0.20	2000	0.6	5.0	5.0		ECA2VHG3R3( )	200	500
	4.7	10	16	50	0.20	2000	0.6	5.0	5.0		ECA2VHG4R7( )	200	500
	10	10	20	82	0.20	2000	0.6	5.0	5.0		ECA2VHG100( )	200	500

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### ■ Standard Products

W.V.	Cap. (±20%)	Case size		Specification			Lead Length				Part No.	Min. Packaging Qty	
		Dia.	Length	Ripple current (120Hz) (+105°C) (mA)	D.F. (120Hz) (+20°C)	Endu- rance (hours)	Lead Dia.	Lead Space				Straight Leads	Taping
(V)	(μF)	(mm)	(mm)				(mm)	Straight (mm)	Taping *B (mm)	Taping *i (mm)		(pcs)	(pcs)
350	22	12.5	20	130	0.20	2000	0.6	5.0	5.0		ECA2VHG220( )	200	500
	33	16	25	195	0.20	2000	0.8	7.5	7.5		ECA2VHG330( )	100	250
	47	16	25	230	0.20	2000	0.8	7.5	7.5		ECA2VHG470( )	100	250
	100	18	31.5	375	0.20	2000	0.8	7.5			ECA2VHG101	50	
400	1	6.3	11.2	18	0.24	2000	0.5	2.5	5.0	2.5	ECA2GHG010( )	200	2000
	2.2	8	11.5	30	0.24	2000	0.6	3.5	5.0		ECA2GHG2R2( )	200	1000
	3.3	10	12.5	40	0.24	2000	0.6	5.0	5.0		ECA2GHG3R3( )	200	500
	4.7	10	16	50	0.24	2000	0.6	5.0	5.0		ECA2GHG4R7( )	200	500
	10	10	20	80	0.24	2000	0.6	5.0	5.0		ECA2GHG100( )	200	500
	22	12.5	25	145	0.24	2000	0.6	5.0	5.0		ECA2GHG220( )	200	500
	33	16	25	195	0.24	2000	0.8	7.5	7.5		ECA2GHG330( )	100	250
450	1	8	11.5	18	0.24	2000	0.6	3.5	5.0		ECA2WHG010( )	200	1000
	2.2	10	12.5	29	0.24	2000	0.6	5.0	5.0		ECA2WHG2R2( )	200	500
	3.3	10	16	41	0.24	2000	0.6	5.0	5.0		ECA2WHG3R3( )	200	500
	4.7	10	20	49	0.24	2000	0.6	5.0	5.0		ECA2WHG4R7( )	200	500
	10	12.5	20	75	0.24	2000	0.6	5.0	5.0		ECA2WHG100( )	200	500
	22	16	25	115	0.24	2000	0.8	7.5	7.5		ECA2WHG220( )	100	250
	33	16	31.5	155	0.24	2000	0.8	7.5			ECA2WHG330	100	

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## Panasonic:

[ECA-1CHG100](#) [ECA-1CHG100B](#) [ECA-1EHG470C](#) [ECA-1EHG472U](#) [ECA-1HEN100](#) [ECA-1HEN100B](#) [ECA-1HEN100I](#) [ECA-1HHG101C](#) [ECA-1HHG221E](#) [ECA-1HHG471E](#) [ECA-1HHG4R7C](#) [ECA-1JHG102E](#) [ECA-1JHG221E](#) [ECA-1JHG331E](#) [ECA-1JHG470E](#) [ECA-2AHG100C](#) [ECA-1HM0R1B](#) [ECA-1HM0R1i](#)

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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