NEW

Radial Lead Type

Series: **HD** Type: **A**



■ Features

- Endurance : 105 °C 1000 h to 2000 h
- Minaturize, Higher Capacitance :
  1 Size Miniturized Product of Current A-NHG
- RoHS directive compliant

■ Specifications

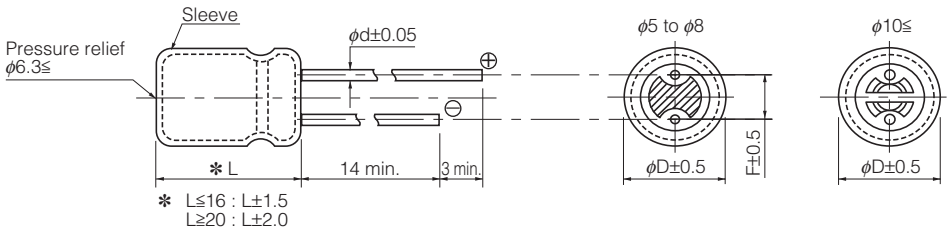
Category Temp. Range	−55 °C to +105 °C	
Rated W.V. Range	10 V.DC to 50 V.DC	
Nominal Cap. Range	0.1 μF to 22000 μF	
Capacitance Tolerance	±20 % (120 Hz/+20 °C)	
DC Leakage Current	I ≦ 0.01 CV or 3 (μA) After 2 minutes (Which is greater)	
tan δ	Please see the attached standard products list	
Endurance	After following life test with DC voltage and +105 °C±2 °C ripple current value applied (The sum of DC and ripple peak voltage shall not exceed the rated working voltage), When the capacitors are restored to 20 °C, the capacitors shall meet the limits specified below. Duration : ϕ5 to ϕ8=1000 hours, ϕ10 to ϕ18=2000 hours	
	Capacitance change	±20 % of initial measured value
	tan δ	≦ 200 % of initial specified value
	DC leakage current	≦ initial specified value
Shelf Life	After storage for 1000 hours at +105 °C±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	1 k	10 k	100 k
10 to 50	0.1 to 33	0.75	1.00	1.55	1.80	2.00
	47 to 470	0.80	1.00	1.35	1.50	1.50
	1000 to 22000	0.85	1.00	1.10	1.15	1.15

■ Dimensions in mm (not to scale)

[mm]



(mm)

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 F	2.0	2.5	3.5	5.0	5.0	7.5	7.5

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Should a safety concern arise regarding this product, please be sure to contact us immediately.

■ Standard Products

W.V.	Cap. (±20 %)	Case size		Specification			Lead Length				Part No.	Min. Packaging Q'ty	
		Dia.	Length	Ripple Current (120 Hz) (+105 °C)	tan δ (120 Hz) (+20 °C)	Endurance	Lead Dia.	Lead Space				Straight Leads	Taping
								Straight	Taping ✻B	Taping ✻H			
(V)	(μF)	(mm)	(mm)	(mA r.m.s.)		(hours)	(mm)	(mm)	(mm)	(mm)		(pcs)	(pcs)
10	330	6.3	11.2	200	0.24	1000	0.5	2.5	5.0	2.5	EEUHD1A331( )	200	2000
	470	8	11.5	250	0.24	1000	0.6	3.5	5.0		EEUHD1A471( )	200	1000
	1000	10	12.5	460	0.24	2000	0.6	5.0	5.0		EEUHD1A102( )	200	500
	2200	10	16	760	0.26	2000	0.6	5.0	5.0		EEUHD1A222( )	200	500
	4700	12.5	20	1260	0.30	2000	0.6	5.0	5.0		EEUHD1A472( )	200	500
	6800	12.5	25	1570	0.34	2000	0.6	5.0	5.0		EEUHD1A682( )	200	500
	10000	16	25	1890	0.42	2000	0.8	7.5	7.5		EEUHD1A103( )	100	250
	15000	16	31.5	2180	0.52	2000	0.8	7.5			EEUHD1A153	100	
	22000	18	35.5	2400	0.66	2000	0.8	7.5			EEUHD1A223	50	
16	100	5	11	110	0.20	1000	0.5	2.5	5.0	2.5	EEUHD1C101( )	200	2000
	220	6.3	11.2	180	0.20	1000	0.5	2.5	5.0	2.5	EEUHD1C221( )	200	2000
	330	8	11.5	260	0.20	1000	0.6	3.5	5.0		EEUHD1C331( )	200	1000
	470	8	11.5	310	0.20	1000	0.6	3.5	5.0		EEUHD1C471( )	200	1000
	3300	12.5	20	1170	0.24	2000	0.6	5.0	5.0		EEUHD1C332( )	200	500
	4700	12.5	25	1480	0.26	2000	0.6	5.0	5.0		EEUHD1C472( )	200	500
	6800	16	25	1780	0.30	2000	0.8	7.5	7.5		EEUHD1C682( )	100	250
	8200	16	25	1780	0.34	2000	0.8	7.5	7.5		EEUHD1C822( )	100	250
	10000	16	31.5	2060	0.38	2000	0.8	7.5			EEUHD1C103	100	
	15000	18	35.5	2210	0.48	2000	0.8	7.5			EEUHD1C153	50	
25	47	5	11	91	0.16	1000	0.5	2.5	5.0	2.5	EEUHD1E470( )	200	2000
	68	5	11	91	0.16	1000	0.5	2.5	5.0	2.5	EEUHD1E680( )	200	2000
	100	6.3	11.2	130	0.16	1000	0.5	2.5	5.0	2.5	EEUHD1E101( )	200	2000
	220	8	11.5	230	0.16	1000	0.6	3.5	5.0		EEUHD1E221( )	200	1000
	330	8	11.5	310	0.16	1000	0.6	3.5	5.0		EEUHD1E331( )	200	1000
	470	10	12.5	380	0.16	2000	0.6	5.0	5.0		EEUHD1E471( )	200	500
	1000	10	16	680	0.16	2000	0.6	5.0	5.0		EEUHD1E102( )	200	500
	2200	12.5	20	1090	0.18	2000	0.6	5.0	5.0		EEUHD1E222( )	200	500
	3300	12.5	25	1400	0.20	2000	0.6	5.0	5.0		EEUHD1E332( )	200	500
	4700	16	25	1750	0.22	2000	0.8	7.5	7.5		EEUHD1E472( )	100	250
	5600	16	25	1750	0.24	2000	0.8	7.5	7.5		EEUHD1E562( )	100	250
	6800	16	31.5	2040	0.26	2000	0.8	7.5			EEUHD1E682	100	
	10000	18	35.5	2200	0.34	2000	0.8	7.5			EEUHD1E103	50	
35	47	5	11	90	0.14	1000	0.5	2.5	5.0	2.5	EEUHD1V470( )	200	2000
	100	6.3	11.2	150	0.14	1000	0.5	2.5	5.0	2.5	EEUHD1V101( )	200	2000
	220	8	11.5	270	0.14	1000	0.6	3.5	5.0		EEUHD1V221( )	200	1000
	330	10	12.5	350	0.14	2000	0.6	5.0	5.0		EEUHD1V331( )	200	500
	470	10	16	460	0.14	2000	0.6	5.0	5.0		EEUHD1V471( )	200	500
	680	10	16	460	0.14	2000	0.6	5.0	5.0		EEUHD1V681( )	200	500
	2200	12.5	25	1260	0.16	2000	0.6	5.0	5.0		EEUHD1V222( )	200	500
	3300	16	25	1610	0.18	2000	0.8	7.5	7.5		EEUHD1V332( )	100	250
	4700	16	31.5	1910	0.20	2000	0.8	7.5			EEUHD1V472	100	
	6800	18	35.5	2050	0.24	2000	0.8	7.5			EEUHD1V682	50	

When requesting taped product, please put the letter "B" or "H" between the "( )". Lead wire pitch B=5 mm, 7.5 mm, H=2.5 mm.
The taping dimensions are explained on EE189 of our Catalog. Please use it as a reference guide.

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W.V.	Cap. (±20 %)	Case size		Specification			Lead Length				Part No.	Min. Packaging Q'ty	
		Dia.	Length	Ripple Current (120 Hz) (+105 °C)	tan δ (120 Hz) (+20 °C)	Endurance	Lead Dia.	Lead Space				Straight Leads	Taping
								Straight	Taping ✻B	Taping ✻H			
(V)	(μF)	(mm)	(mm)	(mA r.m.s.)		(hours)	(mm)	(mm)	(mm)	(mm)		(pcs)	(pcs)
50	0.1	5	11	1.1	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1HR10( )	200	2000
	0.22	5	11	2.3	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1HR22( )	200	2000
	0.33	5	11	3.5	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1HR33( )	200	2000
	0.47	5	11	5	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1HR47( )	200	2000
	1	5	11	10	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1H1R0( )	200	2000
	2.2	5	11	18	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1H2R2( )	200	2000
	3.3	5	11	22	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1H3R3( )	200	2000
	4.7	5	11	26	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1H4R7( )	200	2000
	10	5	11	39	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1H100( )	200	2000
	22	5	11	65	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1H220( )	200	2000
	33	5	11	90	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1H330( )	200	2000
	47	6.3	11.2	110	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1H470( )	200	2000
	68	6.3	11.2	110	0.12	1000	0.5	2.5	5.0	2.5	EEUHD1H680( )	200	2000
	100	8	11.5	180	0.12	1000	0.6	3.5	5.0		EEUHD1H101( )	200	1000
	220	10	12.5	300	0.12	2000	0.6	5.0	5.0		EEUHD1H221( )	200	500
	330	10	16	410	0.12	2000	0.6	5.0	5.0		EEUHD1H331( )	200	500
	470	10	20	530	0.12	2000	0.6	5.0	5.0		EEUHD1H471( )	200	500
	560	16	15	650	0.12	2000	0.8	7.5	7.5		EEUHD1H561S( )	100	250
	680	16	15	650	0.12	2000	0.8	7.5	7.5		EEUHD1H681S( )	100	250
	1000	12.5	25	950	0.12	2000	0.6	5.0	5.0		EEUHD1H102( )	200	500
	2200	16	31.5	1470	0.14	2000	0.8	7.5			EEUHD1H222	100	
	3300	18	35.5	1770	0.16	2000	0.8	7.5			EEUHD1H332	50	

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