FILM CAPACITORS

CAT. No. E1003B Version1.0

FILM CAPACITORS SERIES TABLE

Item	Series	Rated voltage range	Rated Capacitance range (μF)	Category temperature range (℃)
TACD	High frequency use, metallized polyester film. Standard type (Downsizing of TACB series)	250 to 1000 V_{dc}	0.033 to 22	-40 to +105
TACC	High frequency use, metallized polyester film. Large capacitance type of TACD series	450 to 1000 V_{dc}	1.0 to 18	-40 to +105
TACB	High frequency use, metallized polyester film.	250 to 800 V_{dc}	0.033 to 22	-40 to +105
HACB	High frequency use, metallized polyester film. High voltage type of TACD series	630 to 4000 V_{dc}	0.001 to 1.2	-40 to +105
DADC	High frequency use, metallized polyester film. For general use	250 to 630 V_{dc}	0.01 to 4.7	-40 to +105
DLDA	High frequency use, metallized polyester film. For resonance circuit use	800 to 1800 VH	0.001 to 0.1	-40 to +105
DTD-Z	General use, metallized polyester film. Resin dipped stacked type, small size	35 to 250 V_{dc}	0.0015 to 22	-40 to +105
DFDD	General use, metallized polyester film. Resin dipped wound type, small size	250 to 630 V_{dc}	0.01 to 2.2	-40 to +105

CAT. No. E1003B

FILM CAPACITORS PRECAUTIONS AND GUIDELINES

1 In designing device circuits

(1) Confirming operating and installation environment,use capacitors within the performance limits prescribed in their catalog or product specifications.
(2) Do not use capacitors at the environment of which temperature drastically changeseven though it stays within the prescribed range.
(3) Do not use capacitors at the humid or dewy environment.
(4) Select the proper capacitors matching for an application.
(5) Do not use the capacitors, which have particularly been designed for a specific application, into other applications. In particular, do not use the capacitor samples, which are provided for the purpose of appearance or electrical check, for other purpose
(6) Charge and discharge cycles that are rapidly repeated at more than the prescribed conditions causes capacitors to deteriorate in their characteristics or breakdown.
(7) Unless otherwise prescribed, do not apply the surge or ripple voltage of which peak voltage exceeds the specified full rated voltage.
(8) Where using capacitors at a rated temperature, do not apply voltage more than the derating voltage specified at the temperature.
(9) Where using capacitors into AC or pulsing circuits, do not apply current more than the specified maximum permissible current. For the details, consult us.
(10) A rise in capacitor temperature, which is caused by a ripple current, shall be so set as notto exceed the specified limit at non-circulating air condition. Note that a capacitor changes in the temperature rise by the operating temperature as its capacitance changes.
(11) The sum of ambient temperature, including the influence of heat from other components, and the rise of temperature by self-heating must be within the specified upper category.
(12) Do not connect capacitors in series or parallel. Consult us for it.

2 Installation and assembly board washing

(1) Do not pull or twist the lead wires of a capacitor by applying the force more than the limits when installing the capacitor into the printed circuit board. In particular, the capacitor shall be so installed into the board as not to have a crack in the covering resin of the capacitor. If it cannot be avoided, use capacitors with pre–formed lead wires.
(2) If a large–sized capacitor is installed and/or the device is exposed to a vibration shock, anchor the body of the capacitor to the board by means of a clamp or adhesive that does not effect the capacitor.
(3) Do not touch the exterior cover of a capacitor to the metal part of the device or other components.
(4) For soldering, follow the specified conditions. Because the plastic film of the capacitorsis effected by heat, overheating the capacitors during soldering causes tanδ to increase.
(5) If the assembly boards are washed for the purposes of removing residual flux, follow the specified conditions.
①Suitable Solvents Fluorocarbon, Alcohols, Water soluble solvents.
②Cleaning Methods Vaporized Cleaning, Dip Cleaning, Ultrasonic Cleaning. When Cleaning, Temperature and Period Shall not Be Exceeded 50℃ and 5 Minutes.
③After Treatment It is Necessary To Remove Cleaning Solvent From P.W.B. By enough Dryness.

3 While devices are operating

(1) Do not touch a capacitor, while under load, directly with bare hands. Touching the capacitor causes a shock hazard.
(2) Even under non–load condition, a capacitor may have charge. Also, the capacitor that has been discharged may be spontaneously recharged by dielectric absorption. Handle the capacitor after discharging with a discharge resistor.
(3) Do not short the terminals of a capacitor by applying any conductive object. Do not spillany electric– conductive liquid such as acid or alkaline solution over the capacitor as Well.
(4) Do not use capacitors at the following environment ;
①Water, chemicals or oil spatters on the capacitors."
②Direct sunlight pours down onto the capacitors.
③Ozone, ultraviolet rays or radiation is applied to the capacitors.
④Corrosive gas is exposed to the capacitors.

4 If a capacitor should fail while under load, follow the below

If smoke, fire or stench should be emitted while the device is operating, turn off or unplug the power supply of the device and then extinguish a fire.

5 Storage and handling

(1) For the capacitors that are stored for more than a year, make sure of their characteristics and lead solder ability before use.
(2) Don't increase an excessive vibration, a shock, pressure, and so on to the capacitors.
(3) Don't add the excessive power to the lead wire.
(4) Scratching the dielectric film of a capacitor causes If a capacitor body is scratched or damaged so deep that the dielectric film is damaged, the dielectric will be destructively damaged. Handle capacitors with care. In particular, note that CQ92 series capacitors have thin exterior cover resin because of miniaturization.

6 Disposal

Burning capacitors may discharge toxic gas. Ask a specialist for the disposal of industrial wastes.

7 Catalogs

Specifications in catalogs, materials, etc. are subject to change without notice. Performance test data in the catalogs show typical values, which are not assured as specifications. For the details, refer to guidelines EIAJ RCR–2350 for plastic film fixed capacitors for electronic equipment.

CAT. No. E1003B

NIPPON CHEMI-CON

FILM CAPACITOR — TAPING SPECIFICATION

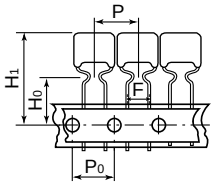
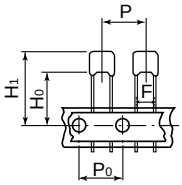
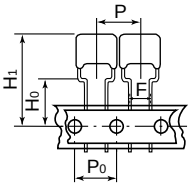
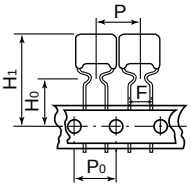
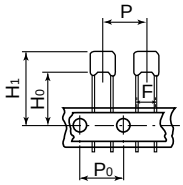
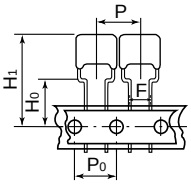
◆PART NUMBERING SYSTEM

DTDA1H104KZ — T4

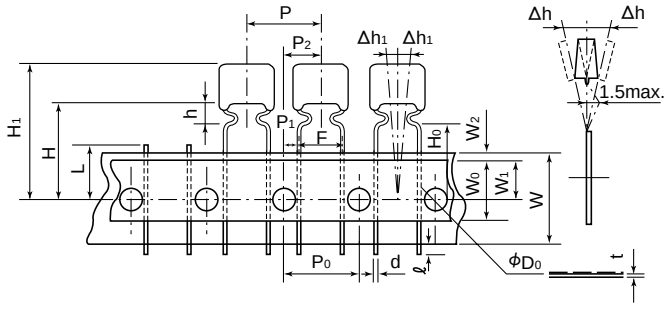
DTDA1H104KZ: Capacitor code
T4: Taping code

◆TAPING TYPE

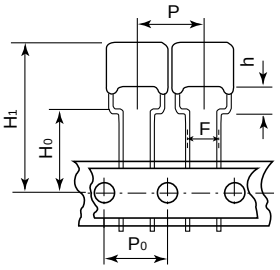
	Specification	Taping code
Standard taping	Component pitch : 12.7, component lead spacing : 5mm	T4, T1, T5, F7T4
Odd size taping	Component pitch : 15.0, component lead spacing : 7.5mm	T7, T3, T2

	Taping code "T4, F7T4"	Taping code "T1"	Taping code "T5"	Taping code "T7"	Taping code "T3"	Taping code "T2"
						
P	12.7	12.7	12.7	15.0	15.0	15.0
P_0	12.7	12.7	12.7	15.0	15.0	15.0
F	5.0	5.0	5.0	7.5	7.5	7.5

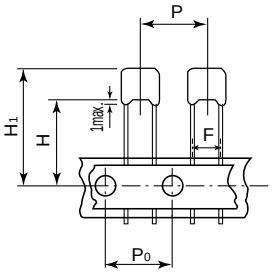
●Taping code (T4, T7, F7T4)



●Taping code (T2, T5)



●Taping code (T1, T3)



(mm)

Taping code		T4, F7T4	T1	T5	T7	T3	T2
Description	Symbol	**Dimension**			**Dimension**		
Component pitch	P	12.7±1.0			15.0±1.0		
Sprocket hole pitch	P_0	12.7±0.2			15.0±0.2		
Component lead to ordinate	P_1	3.85±0.5			3.75±0.5		
Component center to ordinate	P_2	6.35±1.3			7.5±1.3		
Component lead spacing	F	$5.0\pm^{0.8}_{0.2}$			$7.5\pm^{0.8}_{0.2}$		
Carrier tape width	W	$18.0\pm^{1.0}_{0.5}$			$18.0\pm^{1.0}_{0.5}$		
Hole down tape width	W_0	5.0min.			5.0min.		
Sprocket hole position	W_1	9.0±0.5			9.0±0.5		
Adhensive tape border	W_2	3.0max.			3.0max.		
Height to component	H	– – – –	17.0±0.5	– – – –	– – – –	17.0±0.5	– – – –
Height to seating plane	H_0	16.0±0.5	– – – –	16.0±0.5	16.0±0.5	– – – –	16.0±0.5
Overall height above abscissa	H_1	37.0max.			37.0max.		
Sprocket hole diameter	ϕD_0	4.0±0.2			4.0±0.2		
Cut out length	L	11.0max.			11.0max.		
Lead protrusion	ℓ	1.0max.			1.0max.		
Composite tape thickness	t	0.7±0.2			0.7±0.2		
Plane deviation	Δh	0±2.0			0±2.0		
Front to back deviation	Δh_1	0±2.0			0±2.0		
Forming dimension	h	6.0max.	– – – –	6.0max.	6.0max.	– – – –	6.0max.

NIPPON CHEMI-CON

ELECTRONIC EQUIPMENT FILM CAPACITOR

TACD Series

- Maximum operating temperature 105℃.
- Allowable temperature rise 15℃ max.
- Downsizing of TACB series.

◆SPECIFICATIONS

Items	Characteristics
Category temperature range	-40～+105℃
Rated voltage range	250～1000Vdc
Capacitance tolerance	±5% (J) or ±10%(K)
Voltage proof (Terminal - Terminal)	No degradation, at 150% of rated voltage shall be applied for 60 seconds.
Dissipation factor (tanδ)	Not more than 0.05% : Equal or less than 1μF. Not more than (c×0.015+0.05)% : More than 1μF.
Insulation resistance (Terminal - Terminal)	No less than 30000MΩ : Equal or less than 0.33μF. No less than 10000ΩF : More than 0.33μF.

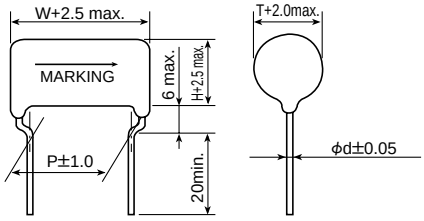
Rated voltage (Vdc)	250	315	400	630	800	1000
Measurement voltage (Vdc)	100	100	100	500	500	500

Rated ripple voltage (Vac)	Shall not exceed the following values in table.					
Rated voltage (Vdc)	250	315	400	630	800	1000
Maximum ripple voltage (Vac)	100	125	150	175	200	250

Endurance	The following specifications shall be satisfied, after 1000hrs with applying rated voltage×125% at 105℃.
Appearance	No serious degradation
Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.
Dissipation factor (tanδ)	No more than initial specification at 1kHz.
Capacitance change	Within ±5% of initial value.

Loading under damp heat	The following specifications shall be satisfied, after 500hrs with applying rated voltage at 40℃ 90～95%RH.
Appearance	No serious degradation.
Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.
Dissipation factor (tanδ)	No more than initial specification at 1kHz.
Capacitance change	Within ±5% of initial value.

◆DIMENSIONS (mm)



W	16.2	18.2	23.2	28.2	43.2
P	10.0	12.5	17.5	22.5	37.5
φD	0.8	0.8	0.8	1.0	1.0

◆PART NUMBERING SYSTEM

TACD	2E	475	J
Series name	Rated voltage code	Nominal capacitance code	Tolerance

Rated voltage (Vdc)	Code
250	2E
315	2F
400	2G
630	2J
800	2K
1000	3A

Capacitance (μF)	Code
0.01	103
0.1	104
1	105
10	106

◆STANDARD RATING

μF \ Vdc	250Vdc(2E)	315Vdc(2F)	400Vdc(2G)	630Vdc(2J)	800Vdc(2K)	1000Vdc(3A)
0.033						16.2× 8.9× 8.5
0.039						16.2× 9.4× 9.0
0.047						16.2×10.0× 9.6
0.056					16.2× 8.5× 8.1	16.2×10.7×10.2
0.068					16.2× 9.0× 8.6	16.2×11.5×11.0
0.082					16.2× 9.6× 9.2	16.2×12.4×11.8
0.1				16.2× 9.1× 8.7	16.2×10.3× 9.8	18.2×12.3×11.7
0.12				16.2× 9.6× 9.2	16.2×11.0×10.5	18.2×13.2×12.6
0.15				16.2×10.4×10.0	16.2×12.0×11.4	18.2×14.5×13.8
0.18				16.2×11.2×10.7	18.2×12.4×11.8	23.2×13.3×12.7
0.22			16.2× 8.7× 8.3	16.2×12.0×11.5	18.2×13.4×12.8	23.2×14.4×13.8
0.27			16.2× 9.3× 8.9	16.2×13.1×12.5	18.2×14.6×13.9	23.2×15.8×15.0
0.33		16.2× 8.6× 8.2	16.2×10.0× 9.5	18.2×13.1×12.5	23.2×13.5×12.9	23.2×17.2×16.4
0.39		16.2× 9.1× 8.7	16.2×10.6×10.1	18.2×14.0×13.4	23.2×14.4×13.8	23.2×18.5×17.6
0.47		16.2× 9.7× 9.2	16.2×11.4×10.8	18.2×15.2×14.5	23.2×15.6×14.9	23.2×20.1×19.1
0.56		16.2×10.3× 9.8	16.2×12.2×11.6	23.2×14.0×13.4	23.2×16.8×16.0	28.2×19.2×18.3
0.68		16.2×11.0×10.5	16.2×13.1×12.5	23.2×15.2×14.5	23.2×18.3×17.5	28.2×20.9×19.9
0.82	16.2×10.8×10.3	16.2×11.9×11.3	18.2×13.2×12.6	23.2×16.5×15.7	23.2×19.9×19.0	28.2×22.8×21.7
1	16.2×11.6×11.1	16.2×12.8×12.2	18.2×14.3×13.7	23.2×18.0×17.1	28.2×19.2×18.3	28.2×24.9×23.7
1.2	16.2×12.5×11.9	18.2×12.9×12.3	23.2×13.4×12.8	23.2×19.5×18.6	28.2×20.8×19.9	28.2×27.1×25.8
1.5	16.2×13.6×13.0	18.2×14.1×13.4	23.2×14.7×14.1	28.2×19.1×18.2	28.2×23.0×22.0	
1.8	16.2×14.7×14.0	18.2×15.2×14.5	23.2×15.9×15.2	28.2×20.8×19.8	28.2×25.1×23.9	
2.2	16.2×15.9×15.2	23.2×14.4×13.7	23.2×17.4×16.5	28.2×22.7×21.7	28.2×27.5×26.2	
2.7	23.2×14.0×13.4	23.2×15.6×14.9	23.2×19.0×18.1	28.2×25.0×23.8	43.2×23.8×22.7	
3.3	23.2×15.2×14.5	23.2×17.1×16.3	28.2×18.6×17.7	28.2×27.4×26.1	43.2×26.0×24.8	
3.9	23.2×16.4×15.6	23.2×18.3×17.5	28.2×20.0×19.1	43.2×23.9×22.8	43.2×28.0×26.7	
4.7	23.2×17.8×16.9	23.2×19.9×19.0	28.2×21.8×20.7	43.2×25.9×24.7		
5.6	28.2×17.1×16.3	28.2×19.3×18.4	28.2×23.6×22.5	43.2×28.1×26.8		
6.8	28.2×18.7×17.8	28.2×21.0×20.0	28.2×25.8×24.5			
8.2	28.2×20.3×19.3	28.2×22.9×21.8	28.2×28.1×26.8			
10	28.2×22.2×21.2	28.2×25.1×23.9				
12	28.2×24.1×23.0	28.2×27.3×26.0				
15	28.2×26.8×25.5	43.2×24.2×23.1				
18		43.2×26.3×25.1				
22		43.2×28.9×27.5				

Dimensions (mm) : W×H×T

CAT. No. E1003B

NIPPON CHEMI-CON

ELECTRONIC EQUIPMENT FILM CAPACITOR

TACC Series

- Maximum operating temperature 105℃.
- Allowable temperature rise 15℃ max.
- Large capacitance of TACB series.

◆SPECIFICATIONS

Items	Characteristics
Category temperature range	-40～+105℃
Rated voltage range	450～1000Vdc
Capacitance tolerance	±5% (J) or ±10%(K)
Voltage proof (Terminal - Terminal)	No degradation, at 150% of rated voltage shall be applied for 60 seconds.
Dissipation factor (tanδ)	No more than 0.05% : Equal or less than 1μF. No more than (c×0.015+0.05)% : More than 1μF.
Insulation resistance (Terminal - Terminal)	No less than 30000MΩ : Equal or less than 0.33μF. No less than 10000ΩF : More than 0.33μF.

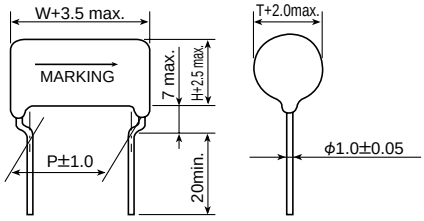
Rated voltage (Vdc)	450	630	800	1000
Measurement voltage (Vdc)	100	500	500	500

Rated ripple voltage (Vac)	Shall not exceed the following values in table.			
Rated voltage (Vdc)	450	630	800	1000
Maximum ripple voltage (Vac)	115	150	175	200

Endurance	The following specifications shall be satisfied, after 1000hrs with applying rated voltage×125% at 85℃.
Appearance	No serious degradation
Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.
Dissipation factor (tanδ)	No more than initial specification at 1kHz.
Capacitance change	Within ±5% of initial value.

Loading under damp heat	The following specifications shall be satisfied, after 500hrs with applying rated voltage at 40℃ 90～95%RH.
Appearance	No serious degradation.
Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.
Dissipation factor (tanδ)	No more than initial specification at 1kHz.
Capacitance change	Within ±5% of initial value.

◆DIMENSIONS (mm)



W	33.2	43.2	53.2
P	27.5	37.5	47.5

◆PART NUMBERING SYSTEM

TACC	2W	475	J
Series name	Rated voltage code	Nominal capacitance code	Tolerance

Rated voltage (Vdc)	Code
450	2W
630	2J
800	2K
1000	3A

Capacitance (μF)	Code
1	105
10	106

◆STANDARD RATING

μF \ Vdc	450Vdc(2W)	630Vdc(2J)	800Vdc(2K)	1000Vdc(3A)
1				33.2×23.4×22.3
1.2				33.2×25.5×24.3
1.5				33.2×28.2×26.9
1.8				43.2×26.4×25.2
2.2			33.2×21.9×20.8	53.2×25.8×24.6
2.7			33.2×24.0×22.9	53.2×28.2×26.9
3.3		33.2×21.5×20.4	33.2×26.3×25.1	
3.9		33.2×23.2×22.1	33.2×28.5×27.1	
4.7		33.2×25.2×24.0	43.2×26.8×25.5	
5.6	33.2×21.0×20.0	33.2×27.4×26.1	53.2×25.7×24.5	
6.8	33.2×22.9×21.9	43.2×25.8×24.6	53.2×28.0×26.7	
8.2	33.2×25.0×23.8	43.2×28.0×26.7		
10	33.2×27.4×26.1	53.2×27.3×26.0		
12	43.2×25.7×24.5			
15	43.2×28.5×27.1			
18	53.2×27.4×26.1			

Dimensions (mm) : W×H×T

CAT. No. E1003B

NIPPON CHEMI-CON

ELECTRONIC EQUIPMENT FILM CAPACITOR

TACB Series

- Maximum operating temperature 105℃.
- Allowable temperature rise 15℃ max.
- A little hum is produced when applied AC voltage.

◆SPECIFICATIONS

Items	Characteristics
Category temperature range	-40～+105℃
Rated voltage range	250～800Vdc
Capacitance tolerance	±5% (J) or ±10%(K)
Voltage proof (Terminal - Terminal)	No degradation, at 150% of rated voltage shall be applied for 60 seconds.
Dissipation factor (tanδ)	No more than 0.05% : Equal or less than 1μF. No more than (c×0.015+0.05)% : More than 1μF.
Insulation resistance (Terminal - Terminal)	No less than 30000MΩ : Equal or less than 0.33μF. No less than 10000ΩF : More than 0.33μF.

Rated voltage (Vdc)	250	315	400	630	800
Measurement voltage (Vdc)	100	100	100	500	500

Rated ripple voltage (Vac): Shall not exceed the following values in table.

Rated voltage (Vdc)	250	315	400	630	800
Maximum ripple voltage (Vac)	125	150	175	200	250

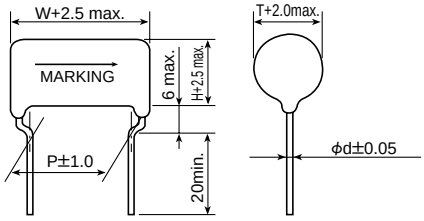
Endurance: The following specifications shall be satisfied, after 1000hrs with applying rated voltage×125% at 105℃.

Appearance	No serious degradation
Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.
Dissipation factor (tanδ)	No more than initial specification at 1kHz.
Capacitance change	Within ±5% of initial value.

Loading under damp heat: The following specifications shall be satisfied, after 500hrs with applying rated voltage at 40℃ 90～95%RH.

Appearance	No serious degradation.
Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.3μF.
Dissipation factor (tanδ)	No more than initial specification at 1kHz.
Capacitance change	Within ±5% of initial value.

◆DIMENSIONS (mm)



W	16.2	18.2	23.2	28.2	43.2
P	10.0	12.5	17.5	22.5	37.5
φD	0.8	0.8	0.8	1.0	1.0

◆PART NUMBERING SYSTEM

TACB	2E	475	J
Series name	Rated voltage code	Nominal capacitance code	Tolerance

Capacitance (μF)	Code
0.01	103
0.1	104
1	105
10	106

Rated voltage (Vdc)	Code
250	2E
315	2F
400	2G
630	2J
800	2K

◆STANDARD RATING

μF \ Vdc	250Vdc(2E)	315Vdc(2F)	400Vdc(2G)	630Vdc(2J)	800Vdc(2K)
0.033					16.2× 8.9× 8.5
0.039					16.2× 9.4× 9.0
0.047					16.2×10.0× 9.6
0.056				16.2× 8.5× 8.1	16.2×10.7×10.2
0.068				16.2× 9.0× 8.6	16.2×11.5×11.0
0.082				16.2× 9.6× 9.2	16.2×12.4×11.8
0.1			16.2× 9.1× 8.7	16.2×10.3× 9.8	18.2×12.3×11.7
0.12			16.2× 9.6× 9.2	16.2×11.0×10.5	18.2×13.2×12.6
0.15			16.2×10.4×10.0	16.2×12.0×11.4	18.2×14.5×13.8
0.18			16.2×11.2×10.7	18.2×12.4×11.8	23.2×13.3×12.7
0.22		16.2× 8.7× 8.3	16.2×12.0×11.5	18.2×13.4×12.8	23.2×14.4×13.8
0.27		16.2× 9.3× 8.9	16.2×13.1×12.5	18.2×14.6×13.9	23.2×15.8×15.0
0.33	16.2× 8.6× 8.2	16.2×10.0× 9.5	18.2×13.1×12.5	23.2×13.5×12.9	23.2×17.2×16.4
0.39	16.2× 9.1× 8.7	16.2×10.6×10.1	18.2×14.0×13.4	23.2×14.4×13.8	23.2×18.5×17.6
0.47	16.2× 9.7× 9.2	16.2×11.4×10.8	18.2×15.2×14.5	23.2×15.6×14.9	23.2×20.1×19.1
0.56	16.2×10.3× 9.8	16.2×12.2×11.6	23.2×14.0×13.4	28.2×16.8×16.0	28.2×19.2×18.3
0.68	16.2×11.0×10.5	16.2×13.1×12.5	23.2×15.2×14.5	23.2×18.3×17.5	28.2×20.9×19.9
0.82	16.2×11.9×11.3	18.2×13.2×12.6	23.2×16.5×15.7	23.2×19.9×19.0	28.2×22.8×21.7
1	16.2×12.8×12.2	18.2×14.3×13.7	23.2×18.0×17.1	28.2×19.2×18.3	28.2×24.9×23.7
1.2	18.2×12.9×12.3	23.2×14.7×14.1	23.2×19.5×18.6	28.2×20.8×19.9	28.2×27.1×25.8
1.5	18.2×14.1×13.4	23.2×15.9×15.2	28.2×19.1×18.2	28.2×23.0×22.0	
1.8	18.2×15.2×14.5	23.2×17.4×16.5	28.2×20.8×19.8	28.2×25.1×23.9	
2.2	23.2×14.4×13.7	23.2×19.0×18.1	28.2×22.7×21.7	28.2×27.5×26.2	
2.7	23.2×15.6×14.9	28.2×18.6×17.7	28.2×25.0×23.8	43.2×23.8×22.7	
3.3	23.2×17.1×16.3	28.2×20.0×19.1	28.2×27.4×26.1	43.2×26.0×24.8	
3.9	23.2×18.3×17.5	28.2×21.8×20.7	43.2×23.9×22.8	43.2×28.0×26.7	
4.7	23.2×19.9×19.0	28.2×23.6×22.5	43.2×25.9×24.7		
5.6	28.2×19.3×18.4	28.2×25.8×24.5	43.2×28.1×26.8		
6.8	28.2×21.0×20.0	28.2×28.1×26.8			
8.2	28.2×22.9×21.8				
10	28.2×25.1×23.9				
12	28.2×27.3×26.0				
15	43.2×24.2×23.1				
18	43.2×26.3×25.1				
22	43.2×28.9×27.5				

Dimensions (mm) : W×H×T

CAT. No. E1003B

NIPPON CHEMI-CON

ELECTRONIC EQUIPMENT FILM CAPACITOR

HACB Series

- Maximum operating temperature 105℃.
- Allowable temperature rise 15℃ max.
- A little hum is produced when applied AC voltage.

◆SPECIFICATIONS

Items	Characteristics
Category temperature range	-40～+105℃
Rated voltage range	630～4000Vdc
Capacitance tolerance	±3% (H) or ±5%(J) : Equal or less than 2000Vdc. ±5% (J) or ±10%(K) : Equal or more than 3150Vdc.
Voltage proof (Terminal - Terminal)	No degradation, at 150% of rated voltage shall be applied for 60 seconds.
Dissipation factor (tanδ)	No more than 0.05% : Equal or less than 1μF. No more than (c×0.015+0.05)% : More than 1μF.
Insulation resistance (Terminal - Terminal)	No less than 30000MΩ : Equal or less than 0.33μF. No less than 10000ΩF : More than 0.33μF.

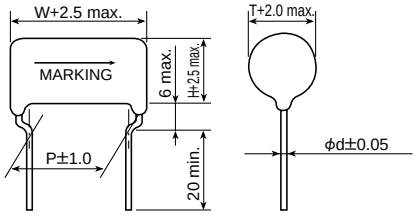
Rated voltage (Vdc)	630	1000	1250	1650	2000	3150	4000
Measurement voltage (Vdc)	500	1000	1000	1000	1000	1000	1000

Rated ripple voltage (Vac)	Shall not exceed the following values in table.						
Rated voltage (Vdc)	630	1000	1250	1600	2000	3150	4000
Maximum ripple voltage (Vac)	300	350	400	450	450	920	920

Endurance	The following specifications shall be satisfied, after 1000hrs with applying rated voltage×125% at 105℃.
Appearance	No serious degradation
Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.
Dissipation factor (tanδ)	Not more than initial specification at 1kHz.
Capacitance change	Within ±5% of initial value.

Loading under damp heat	The following specifications shall be satisfied, after 500hrs with applying rated voltage at 40℃ 90～95%RH.
Appearance	No serious degradation.
Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.
Dissipation factor (tanδ)	Not more than initial specification at 1kHz.
Capacitance change	Within ±5% of initial value.

◆DIMENSIONS (mm)



W	17.7	19.7	22.7	27.7	34.7	42.7	52.7
P	12.5	15.0	17.5	22.5	30.0	37.5	47.5
φD	0.8	0.8	0.8	1.0	1.0	1.0	1.0

◆PART NUMBERING SYSTEM

HACB	3A	472	J
Series name	Rated voltage code	Nominal capacitance code	Tolerance

Rated voltage (Vdc)	Code
630	2J
1000	3A
1250	3B
1600	3C
2000	3D
3150	3F
4000	3G

Capacitance (μF)	Code
0.001	102
0.01	103
0.1	104
1.0	105

◆STANDARD RATING

mF \ Vdc	630Vdc(2J)	1000Vdc(3A)	1250Vdc(3B)	1600Vdc(3C)	2000Vdc(3D)	3150Vdc(3F)	4000Vdc(3G)
0.001					19.7× 8.3× 8.1		
0.0012					19.7× 9.0× 8.6		
0.0015					19.7× 9.6× 9.2		
0.0018					19.7× 9.3× 9.0		
0.0022					19.7×10.0× 9.6		
0.0027					19.7× 8.5× 8.2		34.7×12.7×12.1
0.0033					19.7× 9.1× 8.7		34.7×13.7×13.1
0.0039					19.7× 9.6× 9.2		34.7×14.6×13.9
0.0047				19.7× 8.8× 8.5	19.7×10.2× 9.8	34.7×12.0×11.5	34.7×15.7×15.0
0.0056				19.7× 9.3× 9.0	19.7×11.0×10.5	34.7×12.9×12.3	34.7×17.0×16.2
0.0068				19.7×10.0× 9.6	19.7×11.8×11.3	34.7×13.9×13.3	34.7×18.4×17.5
0.0082				19.7×10.8×10.3	19.7×12.7×12.1	34.7×15.0×14.3	34.7×20.0×19.0
0.01				19.7×11.5×11.0	19.7×13.7×13.1	34.7×16.3×15.5	34.7×21.8×20.7
0.012			17.7× 8.5× 8.2	19.7×12.3×11.8	19.7×14.8×14.1	34.7×17.5×16.7	34.7×23.7×22.6
0.015			17.7× 9.2× 8.8	19.7×13.5×12.9	19.7×16.3×15.5	34.7×19.3×18.4	34.7×26.2×25.0
0.018		17.7× 8.6× 8.3	17.7× 9.8× 9.3	19.7×14.6×13.9	22.7×13.2×12.6	34.7×20.9×19.9	34.7×28.5×27.1
0.022		17.7× 9.3× 8.8	17.7×10.5×10.1	19.7×15.8×15.1	22.7×14.3×13.6	34.7×22.9×21.9	
0.027		17.7× 9.8× 9.5	17.7×11.3×10.8	22.7×13.0×12.4	22.7×15.5×14.8	34.7×25.2×24.0	
0.033	17.7× 8.7× 8.3	17.7×10.7×10.2	17.7×12.2×11.7	22.7×14.0×13.4	22.7×17.0×16.2	34.7×27.5×26.2	
0.039	17.7× 9.3× 8.8	17.7×11.3×10.8	17.7×13.1×12.5	22.7×15.1×14.4	22.7×18.3×17.4		
0.047	17.7× 9.8× 9.3	17.7×12.1×11.6	17.7×14.0×13.4	22.7×16.4×15.6	22.7×19.8×18.8		
0.056	17.7×10.4×10.0	17.7×13.0×12.4	22.7×13.3×12.7	22.7×17.6×16.8	27.7×17.9×17.0		
0.068	17.7×11.3×10.8	17.7×14.0×13.4	22.7×14.4×13.7	22.7×19.1×18.2	27.7×19.4×18.5		
0.082	17.7×12.1×11.6	22.7×12.5×11.9	22.7×15.5×14.8	27.7×17.4×16.6	27.7×21.2×20.2		
0.1	17.7×13.1×12.5	22.7×13.5×12.9	22.7×16.9×16.1	27.7×19.0×18.1	27.7×23.2×22.1		
0.12	17.7×14.0×13.4	22.7×14.6×13.9	22.7×18.4×17.5	27.7×20.6×19.6	27.7×25.3×24.1		
0.15	22.7×12.9×12.3	22.7×16.1×15.3	27.7×17.2×16.4	27.7×22.8×21.8	27.7×27.9×26.6		
0.18	22.7×13.8×13.2	22.7×17.3×16.5	27.7×18.6×17.7	27.7×24.7×23.6	42.7×22.1×21.1		
0.22	22.7×15.1×14.4	22.7×18.9×18.0	27.7×20.3×19.3	27.7×27.7×25.9	42.7×24.5×23.4		
0.27	22.7×16.5×15.7	27.7×18.0×17.1	27.7×22.3×21.3	42.7×23.4×22.3	42.7×26.5×25.3		
0.33	22.7×18.0×17.1	27.7×19.6×18.6	27.7×24.4×23.3	42.7×25.9×24.7			
0.39	22.7×19.3×18.4	22.7×21.1×20.1	27.7×26.3×25.1	42.7×27.9×26.6			
0.47	27.7×18.4×17.5	27.7×22.9×21.9	42.7×21.9×20.8				
0.56	27.7×19.9×18.9	27.7×25.0×23.8	42.7×23.7×22.6				
0.68	27.7×21.7×20.6	27.7×27.3×26.0	42.7×25.8×24.6				
0.82	27.7×23.6×22.5	42.7×22.8×21.8	42.7×27.6×26.3				
1	27.7×25.8×24.6	42.7×25.0×23.8	52.7×27.0×25.7				
1.2	27.7×28.1×26.8	42.7×27.1×25.8					

Dimensions (mm) : W×H×T

NIPPON CHEMI-CON

ELECTRONIC EQUIPMENT FILM CAPACITOR

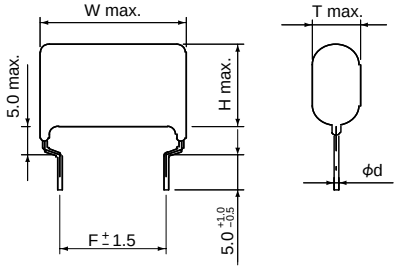
DADC Series

- It is excellent in coping with high current and in heat radiation.
- It can handle a frequency of above 100kHz.
- The amor is a powder molded flame resisting epoxy resin (correspond V-0).

◆SPECIFICATIONS

Items	Characteristics
Category temperature range	-40～+105℃
Rated voltage range	250～630Vdc
Capacitance tolerance	±5% (J)
Voltage proof (Terminal - Terminal)	No degradation, at 150% of rated voltage shall be applied for 60 seconds.
Dissipation factor (tanδ)	No more than 0.05%
Insulation resistance (Terminal - Terminal)	No less than 50000MΩ : Equal or less than 1μF. No less than 50000ΩF : More than 1μF. Rated voltage (Vdc) 250 400 630 Measurement voltage (Vdc) 100 100 500
Rated ripple voltage (Vac)	Shall not exceed the following values in table. Rated voltage (Vdc) 250 400 630 Maximum ripple voltage (Vac) 125 250 300
Endurance	The following specifications shall be satisfied, after 1000hrs with applying rated voltage×125% at 85℃. Appearance: No serious degradation Insulation resistance (Terminal - Terminal): No less than 25000MΩ : Equal or less than 1μF. / No less than 25000ΩF : More than 1μF. Dissipation factor (tanδ): No more than initial specification at 1kHz. Capacitance change: Within ±3% of initial value.
Loading under damp heat	The following specifications shall be satisfied, after 500hrs with applying rated voltage at 40℃ 90～95%RH. Appearance: No serious degradation. Insulation resistance (Terminal - Terminal): No less than 25000MΩ : Equal or less than 1μF. / No less than 25000ΩF : More than 1μF. Dissipation factor (tanδ): No more than initial specification at 1kHz. Capacitance change: Within ±5% of initial value.

◆DIMENSIONS (mm)



◆PART NUMBERING SYSTEM

DADC 2E 103 J -F2BM

- DADC: Series name
- 2E: V(code) : (2E, 2G, 2J)
- 103: Capacitance code
- J: Cap.tolerance (J : ±5%)
- -F2BM: Lead Style

Lead Space	Lead Style
7.5mm	-F2BM
20.0mm	-F2NM
22.5mm	-F2EM
25.0mm	-F2PM

◆STANDARD RATING

Vdc / μF	250Vdc(2E) W	H	T	F	d	400Vdc(2G) W	H	T	F	d	630Vdc(2J) W	H	T	F	d
0.01 (103)	15.5	11.0	7.0	7.5	0.8	15.5	11.0	7.0	7.5	0.8	15.5	11.0	7.0	7.5	0.8
0.012 (123)	15.5	11.5	7.5	7.5	0.8	15.5	11.5	7.5	7.5	0.8	15.5	11.5	7.5	7.5	0.8
0.015 (153)	15.5	13.0	8.5	7.5	0.8	15.5	13.0	8.5	7.5	0.8	15.5	13.0	8.5	7.5	0.8
0.018 (183)	15.5	11.5	7.5	7.5	0.8	15.5	11.5	7.5	7.5	0.8	15.5	11.5	7.5	7.5	0.8
0.022 (223)	15.5	12.0	6.0	7.5	0.8	15.5	12.0	6.0	7.5	0.8	16.0	12.5	7.0	7.5	0.8
0.027 (273)	15.5	12.5	6.5	7.5	0.8	15.5	12.5	6.5	7.5	0.8	16.0	12.5	7.0	7.5	0.8
0.033 (333)	15.5	13.0	7.0	7.5	0.8	15.5	13.0	7.0	7.5	0.8	16.0	13.0	7.5	7.5	0.8
0.039 (393)	15.5	13.0	7.5	7.5	0.8	15.5	13.0	6.0	7.5	0.8	20.5	12.5	7.0	7.5	0.8
0.047 (473)	15.5	15.5	7.5	7.5	0.8	15.5	13.5	6.5	7.5	0.8	20.5	12.5	7.0	7.5	0.8
0.056 (563)	15.5	15.5	7.5	7.5	0.8	15.5	14.0	6.5	7.5	0.8	20.5	13.0	7.5	7.5	0.8
0.068 (683)	15.5	12.0	6.5	7.5	0.8	17.5	13.5	6.5	7.5	0.8	20.5	13.5	8.0	7.5	0.8
0.082 (823)	15.5	12.5	7.0	7.5	0.8	17.5	14.0	7.0	7.5	0.8	20.5	14.0	8.5	7.5	0.8
0.1 (104)	17.5	12.0	6.5	7.5	0.8	17.5	14.5	7.5	7.5	0.8	20.5	16.0	8.5	7.5	0.8
0.12 (124)	17.5	12.5	7.0	7.5	0.8	17.5	15.0	8.0	7.5	0.8	20.5	16.5	9.5	7.5	0.8
0.15 (154)	17.5	14.0	7.0	7.5	0.8	17.5	16.0	8.5	7.5	0.8	20.5	17.5	10.5	7.5	0.8
0.18 (184)	17.5	14.5	7.5	7.5	0.8	17.5	16.5	9.5	7.5	0.8	20.5	18.5	11.0	7.5	0.8
0.22 (224)	17.5	15.5	7.5	7.5	0.8	20.5	16.0	9.0	7.5	0.8	20.5	21.0	11.5	7.5	0.8
0.27 (274)	17.5	16.0	8.0	7.5	0.8	20.5	18.0	9.5	7.5	0.8	20.5	22.5	13.0	7.5	0.8
0.33 (334)	17.5	16.5	8.5	7.5	0.8	20.5	19.0	10.5	7.5	0.8	29.0	18.5	11.5	20.0	0.8
0.39 (394)	17.5	17.5	9.0	7.5	0.8	20.5	19.5	11.5	7.5	0.8	29.0	19.5	12.5	20.0	0.8
0.47 (474)	22.5	16.5	8.0	7.5	0.8	22.5	20.0	11.5	7.5	0.8	29.0	20.5	13.5	20.0	0.8
0.56 (564)	22.5	17.0	8.5	7.5	0.8	22.5	21.0	13.0	7.5	0.8	29.0	22.5	14.0	20.0	0.8
0.68 (684)	22.5	17.5	9.0	7.5	0.8	25.5	21.0	13.0	7.5	0.8	29.0	23.5	15.0	20.0	0.8
0.82 (824)	22.5	18.0	10.0	7.5	0.8	25.5	22.5	14.0	7.5	0.8	36.0	23.0	14.5	25.0	0.8
1.0 (105)	22.5	19.0	10.5	7.5	0.8	25.5	23.5	15.5	7.5	0.8	36.0	24.0	15.5	25.0	0.8
1.2 (125)	22.5	20.0	11.5	7.5	0.8	25.5	25.0	16.5	7.5	0.8	36.0	25.5	17.0	25.0	0.8
1.5 (155)	22.5	21.0	12.5	7.5	0.8	25.5	26.5	18.5	7.5	0.8					
1.8 (185)	22.5	22.0	14.0	7.5	0.8	31.0	26.0	17.5	22.5	0.8					
2.2 (225)	22.5	23.5	15.0	7.5	0.8	31.0	27.5	19.5	22.5	0.8					
2.7 (275)	25.5	24.0	15.5	7.5	0.8										
3.3 (335)	25.5	24.5	16.5	7.5	0.8										
3.9 (395)	31.0	25.5	17.5	22.5	0.8										
4.7 (475)	31.0	27.0	19.0	22.5	0.8										

Dimensions (mm) : W×H×T

CAT. No. E1003B

NIPPON CHEMI-CON

ELECTRONIC EQUIPMENT FILM CAPACITOR

DLDA Series

- It is excellent in coping with high current and in heat radiation.
- For high current, it is made to cope with current up to 25Ampere.
- As a countermeasure against high voltage along with high current, it is made to withstand a high voltage of up to 1800VH.

◆SPECIFICATIONS

Items	Characteristics
Category temperature range	-40～+105℃
Rated voltage range	800～1800VH
Capacitance tolerance	±3% (J)
Voltage proof (Terminal - Terminal)	No degradation, at 150% of rated voltage shall be applied for 60 seconds.
Dissipation factor (tanδ)	No more than 0.1%
Insulation resistance (Terminal - Terminal)	No less than 50000MΩ at 500Vdc
Rated ripple voltage (Vac)	Shall not exceed the following values in table.

Rated voltage (VH)	800	1000	1250	1500	1800
Maximum ripple voltage (Vac)	350	450	650	700	800

Endurance

The following specifications shall be satisfied, after 1000hrs with applying rated voltage×125% at 85℃.

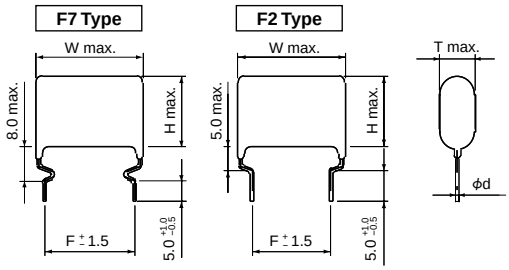
Appearance	No serious degradation
Insulation resistance (Terminal - Terminal)	No less than 25000MΩ
Dissipation factor (tanδ)	No more than initial specification at 1kHz.
Capacitance change	Within ±3% of initial value.

Loading under damp heat

The following specifications shall be satisfied, after 500hrs with applying rated voltage at 40℃ 90～95%RH.

Appearance	No serious degradation.
Insulation resistance (Terminal - Terminal)	No less than 25000MΩ
Dissipation factor (tanδ)	No more than initial specification at 1kHz.
Capacitance change	Within ±5% of initial value.

◆DIMENSIONS (mm)



◆PART NUMBERING SYSTEM

DLDA 2K 102 H -F2BM

- -F2BM : Lead Style
- H : Cap.tolerance (J : ±3%)
- 102 : Capacitance code
- 2K : V(code) : (2K, 3A, 3B, 3L, 3S)
- DLDA : Series name (DLDA)

V (CODE)	Lead Style
2K	-F2BM
3A	-F7DM
	-F2DM
3B	-F7DM
	-F2DM
3L	-F7DM
	-F2DM
3S	-F2DM

◆STANDARD RATING

Vdc / μF	800VH/1000Vdc(2K)					1000VH/1250Vdc(3A)					1250VH/1600Vdc(3B)					1500VH/2000Vdc(3L)					1800VH/2000Vdc(3S)				
	W	H	T	F	d	W	H	T	F	d	W	H	T	F	d	W	H	T	F	d	W	H	T	F	d
0.001	16.0	14.0	7.0	7.5	0.8	18.0	12.0	6.5	15.0	0.8	18.0	12.0	6.5	15.0	0.8	18.0	12.0	6.5	15.0	0.8	22.5	11.0	6.5	15.0	0.8
0.0012	16.0	14.0	7.0	7.5	0.8	18.0	12.5	6.5	15.0	0.8	18.0	12.5	6.5	15.0	0.8	18.0	12.5	6.5	15.0	0.8	22.5	11.5	7.0	15.0	0.8
0.0015	16.0	14.0	7.0	7.5	0.8	18.0	13.0	7.0	15.0	0.8	18.0	13.0	7.0	15.0	0.8	18.0	13.0	7.0	15.0	0.8	22.5	13.0	8.0	15.0	0.8
0.0018	16.0	14.0	7.0	7.5	0.8	18.0	12.5	7.0	15.0	0.8	18.0	12.5	7.0	15.0	0.8	18.0	13.5	7.5	15.0	0.8	22.5	13.5	8.5	15.0	0.8
0.0022	16.0	11.0	6.0	7.5	0.8	18.0	13.0	7.5	15.0	0.8	18.0	13.0	7.5	15.0	0.8	18.0	14.0	8.0	15.0	0.8	22.5	13.0	8.0	15.0	0.8
0.0027	16.0	11.0	6.5	7.5	0.8	18.0	11.0	6.0	15.0	0.8	18.0	13.5	8.0	15.0	0.8	18.0	14.5	9.0	15.0	0.8	22.5	15.0	8.5	15.0	0.8
0.0033	16.0	11.5	7.0	7.5	0.8	18.0	11.0	6.5	15.0	0.8	18.0	14.0	8.5	15.0	0.8	22.5	14.0	7.0	15.0	0.8	22.5	15.5	9.0	15.0	0.8
0.0039	16.0	11.0	6.0	7.5	0.8	18.0	11.5	7.0	15.0	0.8	18.0	14.5	9.0	15.0	0.8	22.5	14.0	7.5	15.0	0.8	22.5	16.0	10.0	15.0	0.8
0.0047	16.0	11.0	6.5	7.5	0.8	18.0	10.5	5.5	15.0	0.8	22.5	14.0	7.0	15.0	0.8	22.5	15.0	8.0	15.0	0.8	22.5	17.0	10.5	15.0	0.8
0.0056	16.0	11.5	7.0	7.5	0.8	18.0	11.0	6.0	15.0	0.8	22.5	14.5	7.5	15.0	0.8	22.5	16.0	8.5	15.0	0.8	22.5	18.5	11.5	15.0	0.8
0.0068	16.0	13.0	8.0	7.5	0.8	18.0	11.5	6.5	15.0	0.8	22.5	15.5	8.0	15.0	0.8	22.5	16.5	9.5	15.0	0.8	22.5	19.5	12.5	15.0	0.8
0.0082	16.0	13.5	8.5	7.5	0.8	18.0	13.0	7.5	15.0	0.8	22.5	16.0	8.5	15.0	0.8	22.5	17.0	10.0	15.0	0.8	22.5	20.5	13.5	15.0	0.8
0.01	16.0	11.0	6.5	7.5	0.8	18.0	13.5	8.0	15.0	0.8	22.5	16.5	9.0	15.0	0.8	22.5	18.0	11.0	15.0	0.8	22.5	22.0	15.0	15.0	0.8
0.012	16.0	11.0	6.5	7.5	0.8	18.0	15.0	9.0	15.0	0.8	22.5	17.0	10.0	15.0	0.8	22.5	19.0	11.5	15.0	0.8	26.0	21.0	14.0	15.0	0.8
0.015	16.0	11.5	7.0	7.5	0.8	18.0	16.0	9.5	15.0	0.8	22.5	18.0	11.0	15.0	0.8	22.5	20.0	13.0	15.0	0.8	26.0	22.5	15.5	15.0	0.8
0.018	16.0	13.0	8.0	7.5	0.8	18.0	16.5	10.5	15.0	0.8	22.5	19.0	12.0	15.0	0.8	22.5	21.5	13.5	15.0	0.8	26.0	24.0	16.5	15.0	0.8
0.022	16.0	14.5	8.5	7.5	0.8	18.0	17.5	11.5	15.0	0.8	26.0	19.0	11.5	15.0	0.8										
0.027	16.0	15.5	9.5	7.5	0.8	18.0	19.5	12.5	15.0	0.8	26.0	20.0	12.5	15.0	0.8										
0.033	16.0	16.0	10.0	7.5	0.8	22.5	16.5	10.5	15.0	0.8	26.0	21.0	14.0	15.0	0.8										
0.039	16.0	17.0	10.5	7.5	0.8	22.5	17.5	11.0	15.0	0.8	26.0	22.0	15.0	15.0	0.8										
0.047	20.0	15.5	9.5	7.5	0.8	22.5	19.5	12.0	15.0	0.8	26.0	23.5	16.5	15.0	0.8										
0.056	20.0	16.0	10.0	7.5	0.8	22.5	20.5	13.0	15.0	0.8	26.0	25.0	17.5	15.0	0.8										
0.068	20.0	16.5	11.0	7.5	0.8	22.5	21.5	14.5	15.0	0.8															
0.082	20.0	17.5	11.5	7.5	0.8																				
0.1	20.0	18.5	12.5	7.5	0.8																				

Dimensions (mm) : W×H×T

CAT. No. E1003B

NIPPON CHEMI-CON

ELECTRONIC EQUIPMENT FILM CAPACITOR

DTD-Z Series

- Maximum operating temperature 105℃.
- Stacked type.
- Very small type.

◆SPECIFICATIONS

Items	Characteristics
Category temperature range	-40～+105℃
Rated voltage range	35～250Vdc
Capacitance tolerance	±10% (K)
Voltage proof (Terminal - Terminal)	No degradation, at 150% of rated voltage shall be applied for 60 seconds.
Dissipation factor (tanδ)	Not more than 1.0% at 1kHz.
Insulation resistance (Terminal - Terminal)	No less than 9000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.

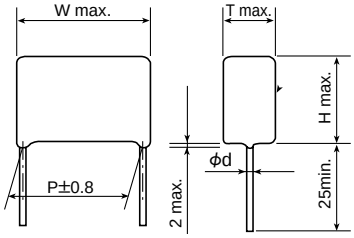
Rated voltage (Vdc)	35	50	100	160	250
Measurement voltage (Vdc)	10	50	100	100	100

Rated ripple voltage (Vac)	Shall not exceed the following values in table.				
Rated voltage (Vdc)	35	50	100	160	250
Maximum ripple voltage (Vac)	14	16	44	63	125

Endurance	The following specifications shall be satisfied, after 1000hrs with applying rated voltage×125% at 85℃.
Appearance	No serious degradation
Insulation resistance (Terminal - Terminal)	No less than 3000MΩ : Equal or less than 0.33μF. No less than 1000ΩF : More than 0.33μF.
Dissipation factor (tanδ)	Not more than 1.1% at 1kHz.
Capacitance change	Within ±7% of initial value.

Loading under damp heat	The following specifications shall be satisfied, after 500hrs with applying rated voltage at 40℃ 90～95%RH.
Appearance	No serious degradation.
Insulation resistance (Terminal - Terminal)	No less than 3000MΩ : Equal or less than 0.33μF. No less than 1000ΩF : More than 0.33μF.
Dissipation factor (tanδ)	Not more than 1.1% at 1kHz.
Capacitance change	Within ±10% of initial value.

◆DIMENSIONS (mm)



- Lead Diameter

		DTDA	DTDB	DTDC	DTDD	DTDE
φd	H≦7mm	0.5	0.5	0.6	0.6	0.8
	H>7mm	0.6	0.6			

◆PART NUMBERING SYSTEM

DTD	C	1H	475	K	Z
Series name	Lead space code	Rated voltage code	Nominal capacitance code	Tolerance	Suffix

Capacitance (μF)	Code
0.01	103
0.1	104
1	105
10	106

Rated voltage (Vdc)	Code
50	1H
100	2A
250	2E

Body width (W)	Lead Space	Code
7.5	5.0mm	A
10.5	7.5mm	B
12.5	10.0mm	C
16.0	12.5mm	G
17.5	15.0mm	D
25.0	22.5mm	E

◆STANDARD RATING

μF \ Vdc	35Vdc (1V)	50Vdc (1H)	100Vdc (2A)	250Vdc (2E)
0.01				10.5× 7.0×4.0
0.015				10.5× 7.0×4.0
0.022				10.5× 7.0×4.0
0.033			7.5× 5.0× 4.0	10.5× 7.0×4.0
0.047			7.5× 5.0× 4.0	10.5× 7.0×4.0
0.068			7.5× 5.0× 4.1	10.5× 7.0×4.1
0.1		7.5× 5.0× 4.4	7.5× 5.0× 4.6	10.5× 7.0×4.9
0.15		7.5× 7.0× 4.3	7.5× 7.0× 5.2	10.5×10.0×4.7
0.22		7.5×10.0× 4.2	7.5×10.0× 5.1	10.5×10.0×5.7
0.33		7.5×10.0× 4.9	7.5×10.0× 6.3	10.5×10.0×7.4
0.47		7.5×10.0× 5.8	10.5×10.0× 5.5	12.5×10.0×7.8
0.68		10.5×10.0× 5.0	10.5×10.0× 6.7	12.5×12.5×8.4
1		10.5×10.0× 6.2	10.5×12.5× 7.4	12.5×15.0×9.6
1.5		10.5×12.5× 6.6	12.5×12.5× 7.5	17.5×15.0×8.5
2.2		12.5×12.5× 6.7	12.5×12.5× 9.8	17.5×20.0×8.9
3.3	16.0×10.0× 6.7	12.5×12.5× 8.8	12.5×15.0×11.5	25.0×20.0×8.5
4.7	16.0×12.5× 7.2	12.5×15.0×10.2	17.5×15.0× 9.7	
6.8	16.0×12.5× 9.1	17.5×15.0× 9.3	17.5×20.0×10.1	
10	16.0×15.0× 9.5	17.5×20.0×10.0	25.0×20.0× 9.5	
15	16.0×20.0×11.1	25.0×20.0× 9.1	25.0×20.0×12.9	
22	16.0×20.0×13.0	25.0×20.0×11.9		

Dimensions (mm) : W×H×T

<NOTE>
Ask about the dimensions of the except for the table.

CAT. No. E1003B

NIPPON CHEMI-CON

ELECTRONIC EQUIPMENT FILM CAPACITOR

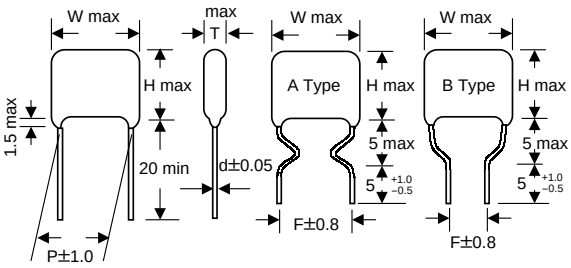
DFDD Series

- A highly reliable capacitor for general applications using a metallized polyethylene terephthalate film as dielectric.
- Non-inductive structure made by special metal spraying process.
- The amor is a powder molded flame resisting epoxy resin (correspond V-0).

◆SPECIFICATIONS

Items	Characteristics
Category temperature range	-40～+105℃
Rated voltage range	250～630Vdc
Capacitance tolerance	±10% (K)
Voltage proof (Terminal - Terminal)	No degradation, at 150% of rated voltage shall be applied for 60 seconds.
Dissipation factor (tanδ)	No more than 1.0%
Insulation resistance (Terminal - Terminal)	No less than 9000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF. Rated voltage (Vdc) 250 400 630 Measurement voltage (Vdc) 100 100 500
Rated ripple voltage (Vac)	Shall not exceed the following values in table. Rated voltage (Vdc) 250 400 630 Maximum ripple voltage (Vac) 125 125 250
Endurance	The following specifications shall be satisfied, after 1000hrs with applying rated voltage×125% at 85℃. Appearance: No serious degradation Insulation resistance (Terminal - Terminal): No less than 4500MΩ : Equal or less than 0.33μF. / No less than 1500ΩF : More than 0.33μF. Dissipation factor (tanδ): No more than 1.1%. Capacitance change: Within ±5% of initial value.
Loading under damp heat	The following specifications shall be satisfied, after 500hrs with applying rated voltage at 40℃ 90～95%RH. Appearance: No serious degradation. Insulation resistance (Terminal - Terminal): No less than 4500MΩ : Equal or less than 0.33μF. / No less than 1500ΩF : More than 0.33μF. Dissipation factor (tanδ): No more than 1.1%. Capacitance change: Within ±5% of initial value.

◆DIMENSIONS (mm)



◆PART NUMBERING SYSTEM

DFDD 2E 103 K -F7BM

- DFDD : Series name : Indicates basic capacitor design
- 2E : Rated voltage (2E : 250Vdc, 2G : 400Vdc, 2J : 630Vdc)
- 103 : Capacitance value : Expressed in Pico farad. The first two digits are signification figures, and the third digit indicates the number of zero following these figures (e.g. 103=10,000pF=0.01μF)
- K : Cap.tolerance (K : ±10%)
- -F7BM : Lead style

◆STANDARD RATING

Vdc / μF	250Vdc(2E) W	H	T	P	F	d	TYPE	400Vdc(2G) W	H	T	P	F	d	TYPE	630Vdc(2J) W	H	T	P	F	d	TYPE
0.01 (103)	10.8	7.4	4.3	7.5	7.5	0.6	A	10.8	7.8	4.4	7.5	7.5	0.6	A	13.0	7.5	4.5	10.0	10.0	0.6	A
0.015 (153)	10.8	7.5	4.4	7.5	7.5	0.6	A	10.8	7.8	4.4	7.5	7.5	0.6	A	13.0	8.0	5.0	10.0	10.0	0.6	A
0.022 (223)	10.8	7.5	4.4	7.5	7.5	0.6	A	10.8	7.8	4.4	7.5	7.5	0.6	A	13.0	10.5	5.5	10.0	10.0	0.6	A
0.033 (333)	10.8	7.5	4.5	7.5	7.5	0.6	A	10.8	9.0	5.5	7.5	7.5	0.6	A	13.0	12.0	6.0	10.0	10.0	0.6	A
0.047 (473)	10.8	7.5	4.5	7.5	7.5	0.6	A	13.0	8.5	5.0	10.0	10.0	0.6	A	13.0	13.5	6.5	10.0	10.0	0.6	A
0.068 (683)	10.8	7.5	4.5	7.5	7.5	0.6	A	13.0	10.5	5.5	10.0	10.0	0.6	A	18.0	11.0	6.0	15.0	10.0	0.6	B
0.1 (104)	10.8	8.4	5.8	7.5	7.5	0.6	A	13.0	12.0	6.5	10.0	10.0	0.6	A	18.0	14.0	6.5	15.0	10.0	0.6	B
0.15 (154)	10.8	10.5	6.0	7.5	7.5	0.6	A	18.0	12.5	5.0	15.0	10.0	0.6	B	18.0	15.5	7.5	15.0	10.0	0.8	B
0.22 (224)	13.0	10.3	5.5	10.0	10.0	0.6	A	18.0	13.0	6.0	15.0	10.0	0.6	B	18.0	16.5	9.0	15.0	10.0	0.8	B
0.33 (334)	13.0	12.0	6.5	10.0	10.0	0.6	A	18.0	15.0	7.0	15.0	10.0	0.8	B	26.0	17.0	8.0	22.5	15.0	0.8	B
0.47 (474)	18.0	12.5	5.3	15.0	10.0	0.6	B	18.0	17.0	8.0	15.0	10.0	0.8	B	26.0	18.5	9.5	22.5	15.0	0.8	B
0.68 (684)	18.0	15.0	7.0	15.0	10.0	0.8	B	26.0	16.5	7.0	22.5	15.0	0.8	B	26.0	21.0	11.5	22.5	15.0	0.8	B
1.0 (105)	18.0	15.0	7.4	15.0	10.0	0.8	B	26.0	18.0	8.5	22.5	15.0	0.8	B							
1.5 (155)	18.0	17.0	9.0	15.0	10.0	0.8	B	26.0	20.0	10.5	22.5	15.0	0.8	B							
2.2 (225)	26.0	17.0	8.5	22.5	15.0	0.8	B														

Dimensions (mm) : W×H×T