DC-Link Capacitor

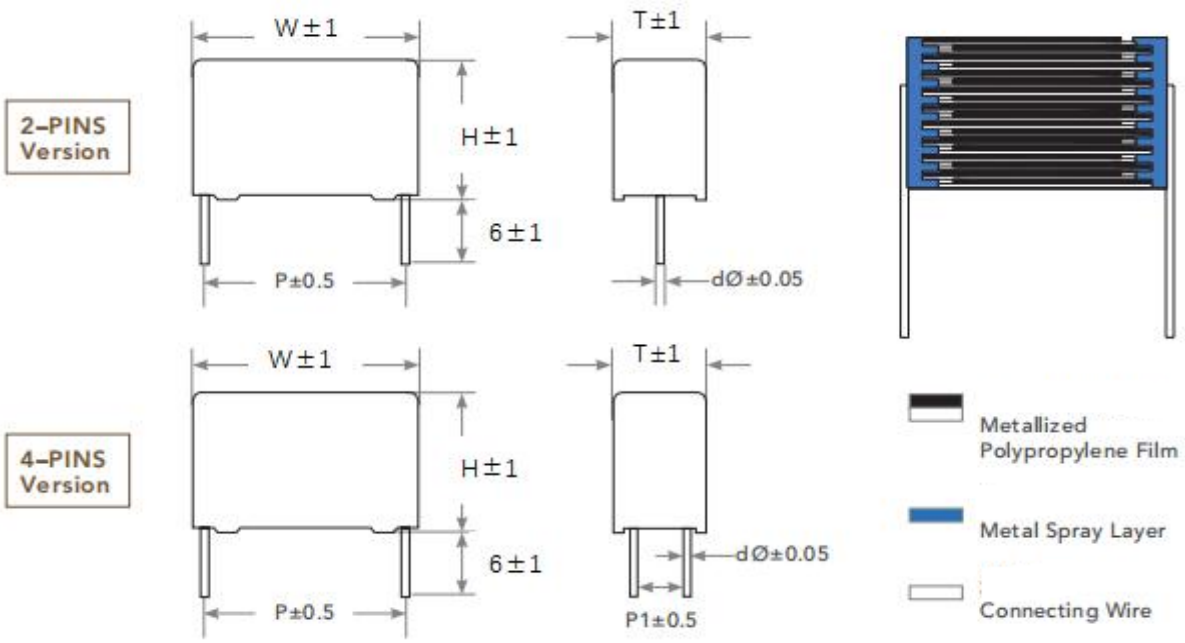
Metallized Polypropylene Film Capacitor-Radial（DPB）DC-Link

DC-Link

8.0uF ±5% 450VDC

	Issuing department:	
Metallized Polypropylene Film Capacitor-Radial	Prepared by:	set date: 2023/8/29
(DPB) DC-Link	Audit:	Version: V1.0

Outline and structure drawing



Construction:

Dielectric: Metallized Polypropylene Film

Winding: Low inductive type

Leads: Tinned Wire

Outer Coating: Flame retarding plastic case and epoxy filled

Feature:

High Capacitance Density

High Ripple Current

Self–healing properties

Recommended Application:

High performance DC filtering applications

Solar inverters

Frequency converters

Electrical Characteristics:

Rated Voltage	V_{NDC} 85°C	450V	500V	600V	800V	900V	1000V	1100V
	V_{OPDC} 70°C	500V	600V	700V	900V	1000V	1100V	1200V
Rated Temperature	–40°C ~+85°C							
Maximum Operating Temperature (Case)	105℃							
Capacitance Range	1.0uF~150uF							
Capacitance Tolerance	±5% (J), ±10% (K)							
Insulation Resistance	Terminal to Terminal: (at 20°C ±5°C), Voltage charge time: 1 minute. Voltage: 100VDC ≥10000S							
Withstand Voltage	Terminal to Terminal: (at 20°C ±5°C) 1.5 × VR applied for 10sec.							
(Ls) **Self inductance (Ls)**	＜1 nH per mm of lead spacing							
Maximum peak current Î（A）	Î = C.dv/dt							

V_{NDC} 85°C =800VDC, V_{OPDC} 70°C = 900VDC												
Cap (uF)	Dimensions(mm)			P ±0.5	P1 ±0.5	d ±0.05	dV/dt (V/us)	Tanδ(%)		ESR 10KHz mΩ	Irms 10KHz A	Part Number
	W	H	T					1KHz	10KHz			
8.0	31	25	15	27.5	--	0.8	35	0.10	1.0	7.8	6.4	DPB805J0450D2P27.5GR-01

5. **chnical requirements** (/ sheet 2)

NO	article	article		test method
5.1	climate type	40/85/21		
5.2	Operating temperature (outer shell)	-40℃~+105℃(attenuation coefficient of Dc voltage and AC current Irms 1.5%/ degree at 85 ~ 105℃)		
5.3	Rated Votage	500Vdc,600Vdc,800Vdc,900Vdc,1000Vdc,1100Vdc,1200Vdc		
5.4	Capacitance range	0.68μF ~140μF		1KHz，1V
5.5	Loss tangent	J(±5%) K(±10%)		22℃ 1 KHz，1V
5.6	Withstand voltage	leads spacing	No breakdown or arc	1.5UR,duration time：10sec
		Leads and outer shell	No breakdown or arc	3000Vac / 50HZ, 60S
5.7	Insulation resistance	≥10,000S		100Vdc charging 1 min 20℃
5.8	Weld ability	The tin area beyond 90%		groove method Ta，Way 1

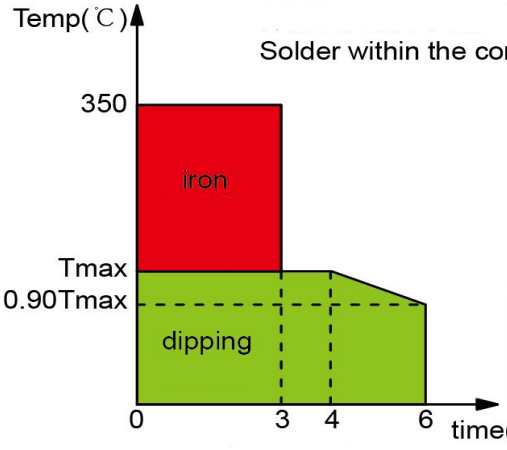
			Solder temperature：260±5℃ Dipping time：2.0±0.5S
5.9	appearance	a. The shell has no rupture, air hole, bubble and white. b. Lead without long paint, no oxidation, no bending, the same length, the same diameter. c. The marking should be clear and centered, no ink, no hyphenation, etc	目测 visual inspection

6. **technical requirements**: sheet 3

NO	article	article	test method
6.1	Initial measurement	Capacitance Loss tangent：1KHz	
	Leading-out strength	The appearance have No visible damage	Pull：0.5＜φd≤0.8mm；10N Bend test Ub: double bending torsion in each direction; Torsion：Two consecutive twists of 180°

	Welding heat resistant	The appearance have No visible damage，clear mark	Welding groove method Tb，Way 1A，260±5%，10±1S
	Welding heat resistant	capacitance：I △C/C I≤5% Tgδ：≤0.01 (1KHz)	
6.2	耐久性 Durability	△C/C ≤ ±5 % Increase of tan δ ≤ 0.0150	1.4Undc was applied at Tmax 85℃ for 250 hours. The test was stopped midway, and the charge and discharge of 1.4 times the maximum current were carried out 1000 times, and then the test was conducted at +85℃ for 250 hours at 1.4 times the voltage.

7. Welding



Solder within the conditions mentioned in the following diagram.

	Tmax	Time	Note
Pre-heating	110℃	1min	
	100℃	1min	MPP P≤7.5
Soldering	270℃	4s	
	260℃	4s	MPP P≤7.5

If re-working or dipping twice in necessary, it should be done after the capacitor returned to the normal temparature.

a.

During manual welding, MPP film capacitor is the worst temperature resistance component among all components, please pay special attention to the welding time, try not to exceed 5 seconds, solder spot as far as possible from the body, in addition, it is not suitable for reflow welding, otherwise the product will cause performance problems due to the thermal shrinkage of the film;

b.

Wave soldering, capacitor is not horizontal installation, direct plug PC board is appropriate, to prevent soldering, tin wave scald capacitor internal materials; It is recommended not to cover the solder carrier,

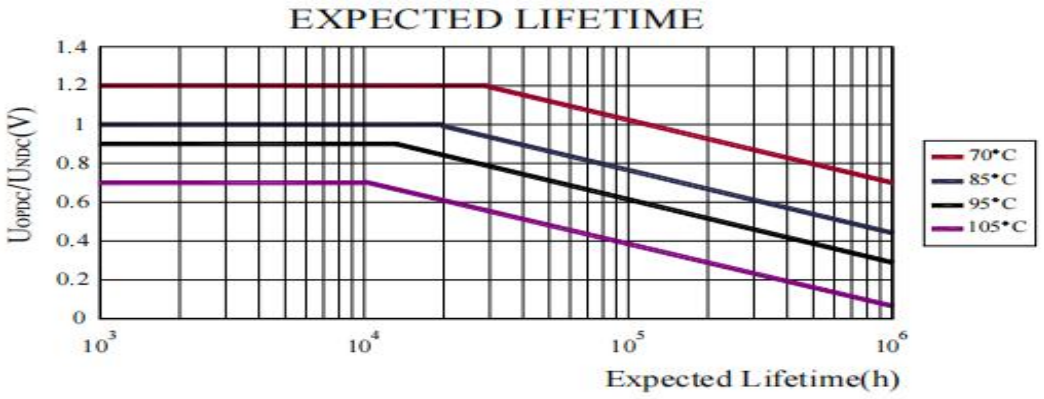
reduce the temperature of capacitor through the tin furnace as far as possible; The temperature of the third

stage of preheating is between 80-100℃, and the temperature is 260℃+/-5. (The lower the temperature, the safer) soldering time within 5S; (double wave soldering total time) Solder process should not stop/stuck material, resulting in long soldering time and soldering time of finished plate, resulting in potential risks of scald; (For other soldering methods, follow this requirement)

c.

When the ambient temperature of metallized film capacitor ≧85℃, keep away from high-heat components to prevent the heat of other components from affecting the normal operation of the capacitor.

7. Ratio of capacitor operating temperature to rated voltage reduction

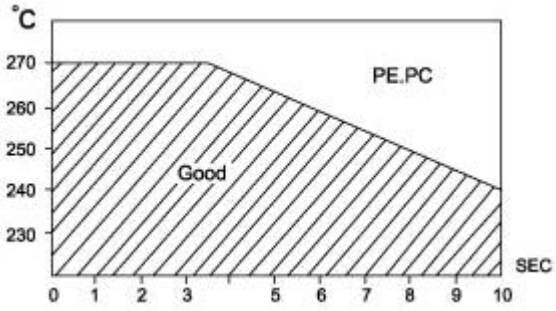


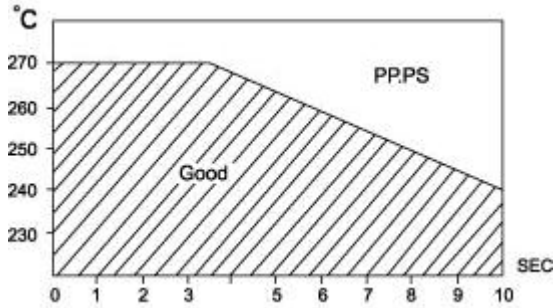
The temperatures-curves are the case-temperatures measured at the hottest point of the capacitor has reached its thermal equilibrium.

Electrical Characteristics of Film Capacitor

1.

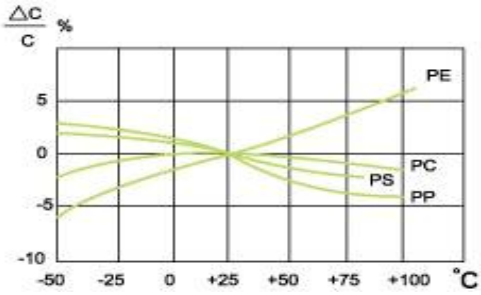
Soldering Temperature VS Time



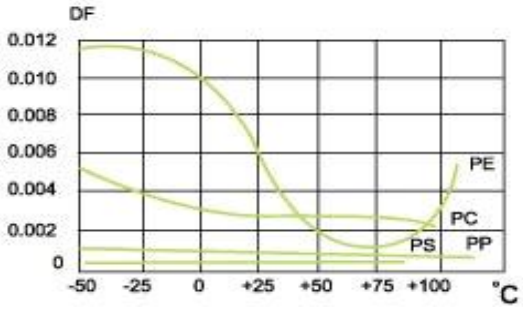


2.

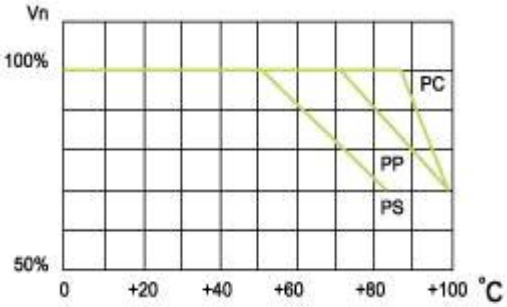
Temperature Characteristic



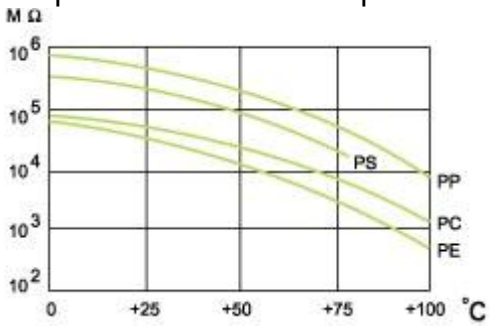
Capacitance vs. Temperature



Dissipation Factor vs. Temperature



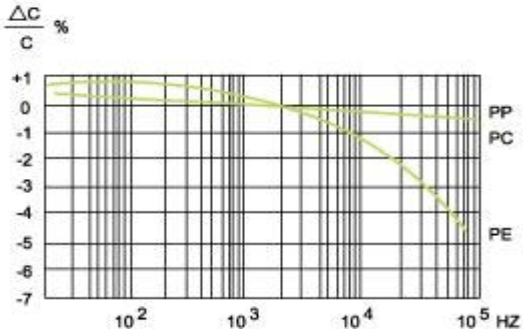
Operation voltage vs. Temperature



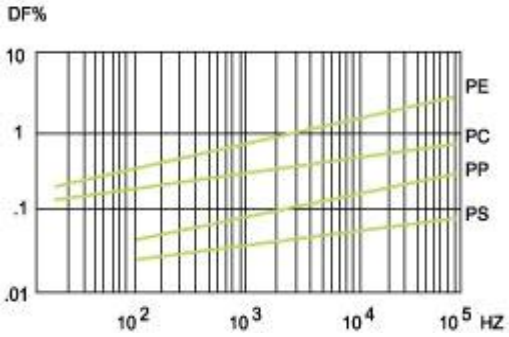
(CR value) IR vs. Temperature

3.

Frequency Characteristics



Capacitance vs. Frequency



Dissipation Factor vs. Frequ