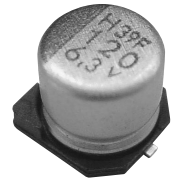


NP CAP™ - **PXH** Series

- Super low ESR, impedance and high heat resistance have been obtained by using conductive polymer as electrolyte.
- Suitable for DC-DC converters, voltage regulators and decoupling applications.
- Endurance with ripple current : 125°C 1000 hours
- Rated voltage range : 2.5 to 20V_{dc}, Capacitance range : 22 to 1000μF
- Case size range : φ6.3×6.0mm to φ10×8.0mm

Feature!
Pb Free Type

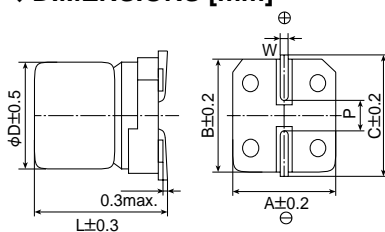


◆ **SPECIFICATIONS**

Items	Characteristics										
Category											
Temperature Range	-55 to +125°C										
Rated Voltage Range	2.5 to 20V _{dc}										
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)										
Surge Voltage	Rated voltage×1.15V (at 105°C)										
Leakage Current	Shall not exceed value shown in STANDARD RATINGS. (at 20°C after 2 minutes)										
Dissipation Factor (tanδ)	0.12 max. (at 20°C, 120Hz)										
Low Temperature Characteristics (Max. Impedance Ratio)	Z(-25°C)/Z(+20°C) ≤ 1.15 Z(-55°C)/Z(+20°C) ≤ 1.25 (at 100kHz)										
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 125°C.										
	<table border="1"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>DF (tanδ)</td> <td>≤ 200% of the initial specified value</td> </tr> <tr> <td>ESR</td> <td>≤ 200% of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ The initial specified value</td> </tr> </table>	Appearance	No significant damage	Capacitance change	≤ ±20% of the initial value	DF (tanδ)	≤ 200% of the initial specified value	ESR	≤ 200% of the initial specified value	Leakage current	≤ The initial specified value
Appearance	No significant damage										
Capacitance change	≤ ±20% of the initial value										
DF (tanδ)	≤ 200% of the initial specified value										
ESR	≤ 200% of the initial specified value										
Leakage current	≤ The initial specified value										
Bias Humidity	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to the DC rated voltage at 60°C, 90 to 95% RH for 1000 hours.										
	<table border="1"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>DF (tanδ)</td> <td>≤ 150% of the initial specified value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ The initial specified value</td> </tr> </table>	Appearance	No significant damage	Capacitance change	≤ ±20% of the initial value	DF (tanδ)	≤ 150% of the initial specified value	ESR	≤ 150% of the initial specified value	Leakage current	≤ The initial specified value
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Capacitance change	≤ ±20% of the initial value										
DF (tanδ)	≤ 150% of the initial specified value										
ESR	≤ 150% of the initial specified value										
Leakage current	≤ The initial specified value										
Surge Voltage	The capacitors shall be subjected to 1000 cycles each consisting of charge with the surge voltage specified at 105°C for 30 seconds through a protective resistor (R=1kΩ) and discharge for 5 minutes 30 seconds.										
	<table border="1"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>DF (tanδ)</td> <td>≤ 150% of the initial specified value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ The initial specified value</td> </tr> </table>	Appearance	No significant damage	Capacitance change	≤ ±20% of the initial value	DF (tanδ)	≤ 150% of the initial specified value	ESR	≤ 150% of the initial specified value	Leakage current	≤ The initial specified value
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Capacitance change	≤ ±20% of the initial value										
DF (tanδ)	≤ 150% of the initial specified value										
ESR	≤ 150% of the initial specified value										
Leakage current	≤ The initial specified value										
Failure Rate	1% per 1000 hours maximum (Confidence level 60%)										

*Note : If any doubt arises, measure the leakage current after following voltage treatment.
Voltage treatment : DC rated voltage are applied to the capacitors for 120 minutes at 125°C.

◆ **DIMENSIONS [mm]**



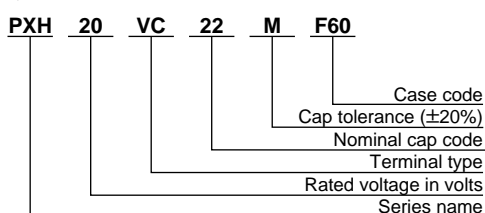
Case code	φD	L	A	B	C	W	P
F60	6.3	5.7	6.6	6.6	7.2	0.5 to 0.8	1.9
H70	8	6.7	8.3	8.3	9.0	0.7 to 1.1	3.1
J80	10	7.7	10.3	10.3	11.0	0.7 to 1.1	4.5

◆ **MARKING**

EX) PXH20VC22MF60



◆ **PART NUMBERING SYSTEM**



Capacitance	Code
39μF	39
100μF	100
220μF	220

Specifications in this bulletin are subject to change without notice. Please ask us for technical specifications before purchase and use.

NP CAP™-PXH Series

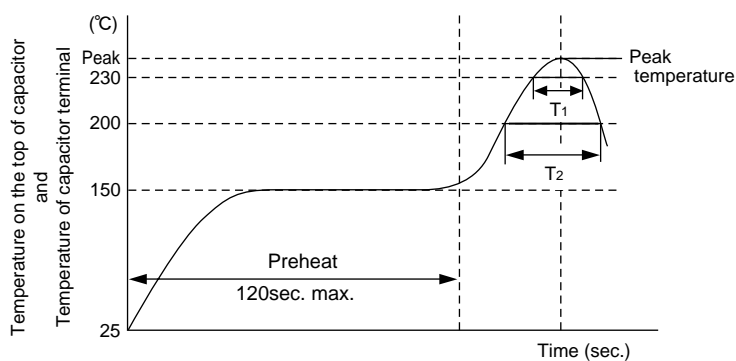
◆STANDARD RATINGS

Case code	Rated voltage (V _{dc})	Nominal Capacitance (μF)	Leakage current (μA _{max})	ESR (mΩ _{max} /20°C,100k to 300kHz)	Rated ripple current (mArms/100k to 300kHz)	
					-55 to +105°C	+105 to +125°C
F60	2.5	220	110	35	2500	770
	4	150	120	35	2450	770
	6.3	82	103	40	2400	720
	6.3	100	126	40	2400	720
	10	56	112	45	2250	680
	16	39	125	50	2050	650
H70	20	22	88	60	1650	590
	2.5	560	280	30	3100	960
	4	220	176	30	3020	960
	6.3	150	189	30	3020	960
	6.3	220	277	30	3020	960
	10	120	240	35	2800	880
	10	150	300	35	2800	880
J80	16	82	262	40	2700	830
	20	47	188	45	2000	780
	2.5	1000	500	25	3700	1100
	4	470	376	25	3700	1100
	6.3	330	416	25	3700	1100
	10	330	660	30	3700	1010
	16	150	480	35	3020	930
	16	180	576	35	3020	930
	20	82	328	45	2400	820

◆Recommended Reflow Soldering Conditions

●Reflow Profile

Method : Air or Infrared Reflow



●Conditions

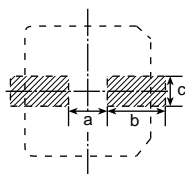
[The times of reflow soldering : once]

- Peak temperature : 250°C max.
- Max. period of time over 230°C(T₁) : 40 sec.max.
- Max. period of time over 200°C(T₂) : 60 sec.max.
- Preheat : 150°C, 120 sec. max.

[The times of reflow soldering : twice]

- Peak temperature : 250°C max.
- Max. period of time over 230°C(T₁) : 30 sec.max.
- Max. period of time over 200°C(T₂) : 50 sec.max.
- Preheat : 150°C, 120 sec. max.

◆Recommended Solder Land on PC Board



Case code	a	b	c
E60	1.4	3.0	1.6
F60	1.9	3.5	1.6
H70	3.1	4.2	2.2

Solder land on PC board