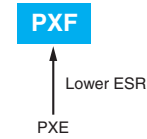


# NPCAP™-PXF Series

- Super low ESR, impedance and high heat resistance have been obtained by using conductive polymer as electrolyte.
- Rated voltage range : 2 to 10V<sub>dc</sub>, Capacitance range : 120 to 1,000μF
- Case size range : φ 5x3.9L to φ 8x7.7L
- Suitable for DC-DC converters, voltage regulators and decoupling applications used on computer motherboards etc.
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant
- Halogen Free



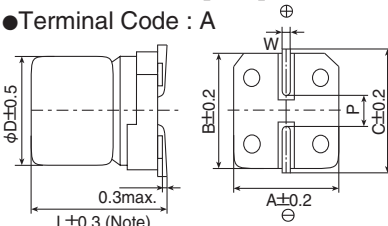
## ◆ SPECIFICATIONS

Items	Characteristics										
<b>Category</b>											
<b>Temperature Range</b>	-55 to +105°C										
<b>Rated Voltage Range</b>	2 to 10V <sub>dc</sub>										
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)										
<b>Surge Voltage</b>	Rated voltage×1.15 (at 105°C)										
<b>Leakage Current</b> <small>*Note</small>	Shall not exceed values shown in STANDARD RATINGS. (at 20°C after 2 minutes)										
<b>Dissipation Factor (tan δ)</b>	0.12 max. (at 20°C, 120Hz)										
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Z(-25°C)/Z(+20°C) ≤ 1.15 Z(-55°C)/Z(+20°C) ≤ 1.25 (at 100kHz)										
<b>Endurance</b>	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 15,000 hours (E40, E46, F45 : 3,000 hours) at 105°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>D.F. (tan δ)</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	D.F. (tan δ)	≤ 150% of the initial specified value	ESR	≤ 150% of the initial specified value	Leakage current	≤ The initial specified value
Appearance	No significant damage										
Capacitance change	≤ ±20% of the initial value										
D.F. (tan δ)	≤ 150% of the initial specified value										
ESR	≤ 150% of the initial specified value										
Leakage current	≤ The initial specified value										
<b>Bias Humidity</b>	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 1,000 hours (E40, E46, F45 : 500 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>D.F. (tan δ)</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	D.F. (tan δ)	≤ 150% of the initial specified value	ESR	≤ 150% of the initial specified value	Leakage current	≤ The initial specified value
Appearance	No significant damage										
Capacitance change	≤ ±20% of the initial value										
D.F. (tan δ)	≤ 150% of the initial specified value										
ESR	≤ 150% of the initial specified value										
Leakage current	≤ The initial specified value										
<b>Surge Voltage</b>	The capacitors shall be subjected to 1,000 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>D.F. (tan δ)</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	D.F. (tan δ)	≤ 150% of the initial specified value	ESR	≤ 150% of the initial specified value	Leakage current	≤ The initial specified value
Appearance	No significant damage										
Capacitance change	≤ ±20% of the initial value										
D.F. (tan δ)	≤ 150% of the initial specified value										
ESR	≤ 150% of the initial specified value										
Leakage current	≤ The initial specified value										
<b>Soldering Heat</b>	The following specifications shall be satisfied when the solder temperature is reduced back to 20°C to measure dip resistance after soldering has been performed under the recommended soldering conditions.										
	<table border="1"> <tr><td>Appearance</td><td>No significant damage</td></tr> <tr><td>Capacitance value</td><td>Within the specified tolerance range</td></tr> <tr><td>D.F. (tan δ)</td><td>≤ The initial specified value</td></tr> <tr><td>ESR</td><td>≤ The initial specified value</td></tr> <tr><td>Leakage current</td><td>≤ The initial specified value (Voltage treatment)</td></tr> </table>	Appearance	No significant damage	Capacitance value	Within the specified tolerance range	D.F. (tan δ)	≤ The initial specified value	ESR	≤ The initial specified value	Leakage current	≤ The initial specified value (Voltage treatment)
Appearance	No significant damage										
Capacitance value	Within the specified tolerance range										
D.F. (tan δ)	≤ The initial specified value										
ESR	≤ The initial specified value										
Leakage current	≤ The initial specified value (Voltage treatment)										
<b>Failure Rate</b>	0.5% per 1,000 hours maximum (Confidence level 60% at 105°C)										

\*Note : If any doubt arises, measure the leakage current after the following voltage treatment.  
Voltage treatment : DC rated voltage is applied to the capacitors for 120 minutes at 105°C.

## ◆ DIMENSIONS [mm]

- Terminal Code : A



Note : L+0.1/-0.2 for E40, E46 and F45

Size Code	φD	L	A	B	C	W	P
E40	5	3.9	5.3	5.3	5.9	0.5 to 0.8	1.4
E46	5	4.5	5.3	5.3	5.9	0.5 to 0.8	1.4
E61	5	5.8	5.3	5.3	5.9	0.5 to 0.8	1.4
F45	6.3	4.4	6.6	6.6	7.2	0.5 to 0.8	1.9
F61	6.3	5.8	6.6	6.6	7.2	0.5 to 0.8	1.9
F80	6.3	7.7	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
H80	8	7.7	8.3	8.3	9.0	0.7 to 1.1	3.1

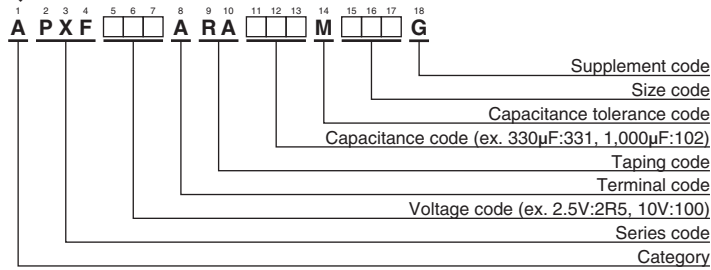
## ◆ MARKING

EX) 2.5V390μF



NPCAP™-PXF Series

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (conductive polymer type)"

◆STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Size code	Leakage current (μA max./after 2min.)	ESR (mΩ max./20°C, 100k to 300kHz)	Rated ripple current (mArms/105°C, 100kHz)	Part No.
2	680	F61	700	12	3,500	APXF2R0ARA681MF61G
2.5	220	E40	700	12	3,300	APXF2R5ARA221ME40G
	220	E46	700	25	2,100	APXF2R5ARA221ME46G
	330	E61	700	10	3,900	APXF2R5ARA331ME61G
	330	F45	700	12	3,500	APXF2R5ARA331MF45G
	390	E61	700	10	3,900	APXF2R5ARA391ME61G
	390	F61	292	10	3,900	APXF2R5ARA391MF61G
	470	F80	352	9	4,200	APXF2R5ARA471MF80G
	560	F61	700	10	3,900	APXF2R5ARA561MF61G
	560	F80	420	9	4,200	APXF2R5ARA561MF80G
	560	H70	420	10	4,500	APXF2R5ARA561MH70G
	680	H70	510	10	4,500	APXF2R5ARA681MH70G
1,000	H80	750	9	4,500	APXF2R5ARA102MH80G	
4	330	F61	396	10	3,900	APXF4R0ARA331MF61G
	390	F80	468	9	4,200	APXF4R0ARA391MF80G
	470	H70	564	10	4,500	APXF4R0ARA471MH70G
	560	H70	672	10	4,500	APXF4R0ARA561MH70G
	680	H80	816	9	4,500	APXF4R0ARA681MH80G
6.3	150	E40	700	20	2,700	APXF6R3ARA151ME40G
	150	E46	700	25	2,100	APXF6R3ARA151ME46G
	150	E61	700	12	3,500	APXF6R3ARA151ME61G
	220	E61	700	12	3,500	APXF6R3ARA221ME61G
	220	F61	415	10	3,900	APXF6R3ARA221MF61G
	270	F80	510	9	4,200	APXF6R3ARA271MF80G
	330	F61	700	10	3,900	APXF6R3ARA331MF61G
	330	F80	623	9	4,200	APXF6R3ARA331MF80G
	330	H70	623	10	4,500	APXF6R3ARA331MH70G
	390	H70	737	10	4,500	APXF6R3ARA391MH70G
	470	H80	888	9	4,500	APXF6R3ARA471MH80G
	560	H80	1,050	9	4,500	APXF6R3ARA561MH80G
10	120	E61	240	22	2,600	APXF100ARA121ME61G
	270	F61	540	20	2,800	APXF100ARA271MF61G

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Frequency (Hz)	120	1k	10k	50k	100k to 500k
SMD type	0.05	0.30	0.55	0.70	1.00