

# NPCAP™-PXA Series

- Super low ESR, impedance and high heat resistance have been obtained by using conductive polymer as electrolyte
- Rated voltage range : 2.5 to 25V<sub>dc</sub>, case size range : φ5×5.7L to φ10×12.2L
- 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



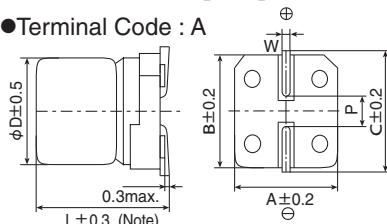
## ◆ SPECIFICATIONS

Items	Characteristics										
<b>Category</b>	-55 to +105°C										
<b>Temperature Range</b>	-55 to +105°C										
<b>Rated Voltage Range</b>	2.5 to 25V <sub>dc</sub>										
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)										
<b>Surge Voltage</b>	Rated voltage × 1.15 (Rated voltage 2.5 to 20V <sub>dc</sub> , 25V <sub>dc</sub> ) / Rated voltage × 1.00 (Rated voltage 23V <sub>dc</sub> ) (at 105°C)										
<b>Leakage Current</b>	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 (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
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<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 (F45 : 500 hours).										
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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.										
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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.										
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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 F45  
L±0.5 for HC0 and JC0

Size code	φD	L	A	B	C	W	P
E60	5	5.7	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
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
HC0	8	12.0	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
JC0	10	12.2	10.3	10.3	11.0	0.7 to 1.1	4.5

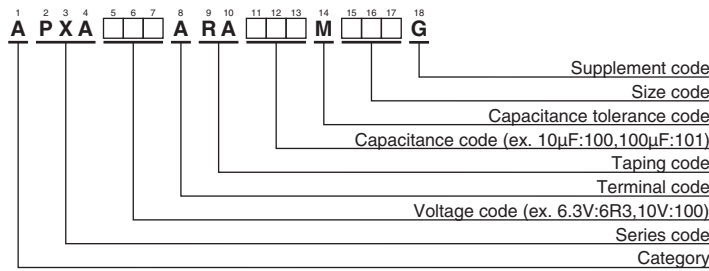
## ◆ MARKING

EX) 16V39μF



NPCAP™-PXASeries

◆PART NUMBERING SYSTEM



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

◆STANDARD RATINGS

VV (V <sub>dc</sub> )	Cap (μF)	Size code	Leakage current (μA max./ after 2 min.)	ESR (mΩ max./ 20°C, 100k to 300kHz)	Rated ripple current (mA rms/105°C, 100kHz)	Part No.	VV (V <sub>dc</sub> )	Cap (μF)	Size code	Leakage current (μA max./ after 2 min.)	ESR (mΩ max./ 20°C, 100k to 300kHz)	Rated ripple current (mA rms/105°C, 100kHz)	Part No.
2.5	220	F60	110	25	2,500	APXA2R5ARA221MF60G	10	33	E60	66.0	40	1,270	APXA100ARA330ME60G
	560	H70	280	23	3,100	APXA2R5ARA561MH70G		47	E60	94.0	40	1,270	APXA100ARA470ME60G
	680	HCO	340	12	4,770	APXA2R5ARA681MHC0G		47	F45	235	41	1,560	APXA100ARA470MF45G
	1,000	J80	500	19	4,240	APXA2R5ARA102MJ80G		47	F60	94.0	31	2,250	APXA100ARA470MF60G
	1,500	JCO	750	10	5,500	APXA2R5ARA152MJCOG		56	F60	112	31	2,250	APXA100ARA560MF60G
4	100	F60	80.0	26	2,450	APXA4R0ARA101MF60G		120	H70	240	27	2,800	APXA100ARA121MH70G
	120	F45	240	38	1,710	APXA4R0ARA121MF45G		150	H70	300	27	2,800	APXA100ARA151MH70G
	150	E60	120	30	1,490	APXA4R0ARA151ME60G		270	HCO	540	14	4,420	APXA100ARA271MHC0G
	150	F60	120	26	2,450	APXA4R0ARA151MF60G		270	J80	540	24	3,770	APXA100ARA271MJ80G
	220	H70	176	25	3,020	APXA4R0ARA221MH70G		330	HCO	660	14	4,420	APXA100ARA331MHC0G
	330	H70	264	25	3,020	APXA4R0ARA331MH70G	330	J80	660	24	3,770	APXA100ARA331MJ80G	
	470	J80	376	20	4,130	APXA4R0ARA471MJ80G	470	JCO	940	12	5,300	APXA100ARA471MJCOG	
	560	HCO	448	12	4,770	APXA4R0ARA561MHC0G	560	JCO	1,120	12	5,300	APXA100ARA561MJCOG	
	680	J80	544	20	4,130	APXA4R0ARA681MJ80G	16	22	E60	70.4	45	1,210	APXA160ARA220ME60G
	820	JCO	656	10	5,500	APXA4R0ARA821MJCOG		22	F45	176	45	1,490	APXA160ARA220MF45G
1,200	JCO	960	10	5,500	APXA4R0ARA122MJCOG	33		F60	105	37	2,050	APXA160ARA330MF60G	
6.3	47	E60	59.2	35	1,380	APXA6R3ARA470ME60G		39	F60	124	37	2,050	APXA160ARA390MF60G
	68	F60	85.6	27	2,400	APXA6R3ARA680MF60G		82	H70	262	30	2,700	APXA160ARA820MH70G
	82	F45	258	40	1,670	APXA6R3ARA820MF45G		150	J80	480	26	3,430	APXA160ARA151MJ80G
	82	F60	103	27	2,400	APXA6R3ARA820MF60G		180	HCO	576	16	4,360	APXA160ARA181MHC0G
	100	E60	126	35	1,380	APXA6R3ARA101ME60G		180	J80	576	26	3,430	APXA160ARA181MJ80G
	100	F45	315	40	1,670	APXA6R3ARA101MF45G		220	JCO	704	14	5,050	APXA160ARA221MJCOG
	100	F60	126	27	2,400	APXA6R3ARA101MF60G		330	JCO	1,050	14	5,050	APXA160ARA331MJCOG
	120	F60	151	27	2,400	APXA6R3ARA121MF60G	20	15	F45	150	57	1,300	APXA200ARA150MF45G
	150	H70	189	25	3,020	APXA6R3ARA151MH70G		22	F60	88.0	50	1,650	APXA200ARA220MF60G
	220	H70	277	25	3,020	APXA6R3ARA221MH70G		39	H70	156	45	2,000	APXA200ARA390MH70G
330	J80	415	20	4,130	APXA6R3ARA331MJ80G	47		H70	188	45	2,000	APXA200ARA470MH70G	
390	HCO	491	12	4,770	APXA6R3ARA391MHC0G	82		J80	328	40	2,500	APXA200ARA820MJ80G	
470	HCO	592	12	4,770	APXA6R3ARA471MHC0G	150		JCO	600	20	4,320	APXA200ARA151MJCOG	
470	J80	592	20	4,130	APXA6R3ARA471MJ80G	23	15	F45	172	57	1,300	APXA230ARA150MF45G	
680	JCO	856	10	5,500	APXA6R3ARA681MJCOG		10	F60	125	65	1,500	APXA250ARA100MF60G	
820	JCO	1,030	10	5,500	APXA6R3ARA821MJCOG	25	22	H70	275	50	1,800	APXA250ARA220MH70G	
							39	J80	487	45	2,100	APXA250ARA390MJ80G	

◆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