



# CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS

Radial Lead

Upgrade!

## NPCAP™-PS Series

- Super low ESR, high temperature resistance
- Large capacitance & Improved high ripple current capability
- Rated voltage range : 2.5 to 35V<sub>dc</sub>
- Endurance : 2,000 hours at 105°C
- Suitable for DC-DC converters, voltage regulators and decoupling applications  
For computer motherboards
- RoHS Compliant



### ◆SPECIFICATIONS

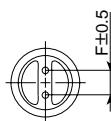
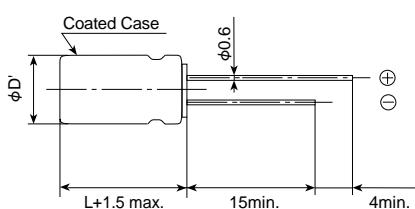
Items	Characteristics											
<b>Category</b> <b>Temperature Range</b>	−55 to +105°C											
<b>Rated Voltage Range</b>	2.5 to 35V <sub>dc</sub>											
<b>Capacitance Tolerance</b>	$\pm 20\%$ (M) (at 20°C, 120Hz)											
<b>Surge Voltage</b>	Rated voltage(V) × 1.15 (at 105°C)											
<b>Leakage Current</b> *Note	I=0.2CV (max.) (Rated voltage 2.5 to 25V <sub>dc</sub> ) / I=0.5CV (max.) (Rated voltage 35V <sub>dc</sub> ) Where, I : Leakage current ( $\mu$ A), C : Nominal capacitance ( $\mu$ F), V : Rated voltage (V <sub>dc</sub> ) (at 20°C after 2 minutes)											
<b>Dissipation Factor</b> (tan $\delta$ )	0.12 max. (at 20°C, 120Hz)											
<b>Low Temperature Characteristics</b> (Max. Impedance Ratio)	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 2,000 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 measured value</td> </tr> <tr> <td>D.F. (tan<math>\delta</math>)</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 measured value	D.F. (tan $\delta$ )	≤ 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 Test</b>	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to DC voltage at 60°C, 90 to 95% RH for 1,000 hours. <table border="1"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial measured value</td> </tr> <tr> <td>D.F. (tan<math>\delta</math>)</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 measured value	D.F. (tan $\delta$ )	≤ 150% of the initial specified value	ESR	≤ 150% of the initial specified value	Leakage current	≤ The initial specified value
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<b>Surge Voltage Test</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=1k $\Omega$ ) 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 measured value</td> </tr> <tr> <td>D.F. (tan<math>\delta</math>)</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 measured value	D.F. (tan $\delta$ )	≤ 150% of the initial specified value	ESR	≤ 150% of the initial specified value	Leakage current	≤ The initial specified value
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Leakage current	≤ The initial specified value											
<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.

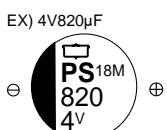
### ◆DIMENSIONS [mm]

- Terminal Code : E



φD	8	10
φd	0.6	
F	3.5	5.0
φD'	φD+0.5max.	
L	L+1.5max.	

### ◆MARKING





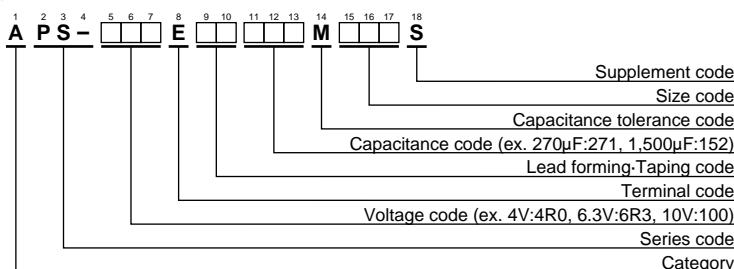
# CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS

Radial Lead

Upgrade!

NPCAP™-PS Series

## ◆PART NUMBERING SYSTEM



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

## ◆STANDARD RATINGS

WV(Vdc)	Cap(μF)	Case size φDXL(mm)	ESR (mΩmax/20°C, 100k to 300kHz)	Rated ripple current (mArms/105°C, 100kHz)	Part No.
2.5	680	8 X11.5	10	5,230	APS-2R5E□□681MHB5S
	820	8 X11.5	10	5,230	APS-2R5E□□821MHB5S
	1500	10 X12.5	8	5,500	APS-2R5E□□152MJC5S
4	560	8 X11.5	10	5,230	APS-4R0E□□561MHB5S
	820	10 X12.5	8	5,500	APS-4R0E□□821MJC5S
	1000	10 X12.5	8	5,500	APS-4R0E□□102MJC5S
	1200	10 X12.5	8	5,500	APS-4R0E□□122MJC5S
6.3	390	8 X11.5	12	4,770	APS-6R3E□□391MHB5S
	470	8 X11.5	12	4,770	APS-6R3E□□471MHB5S
	680	10 X12.5	10	5,500	APS-6R3E□□681MJC5S
	820	10 X12.5	10	5,500	APS-6R3E□□821MJC5S
	1000	10 X12.5	10	5,500	APS-6R3E□□102MJC5S
10	270	8 X11.5	14	4,420	APS-100E□□271MHB5S
	330	8 X11.5	14	4,420	APS-100E□□331MHB5S
	470	10 X12.5	12	5,300	APS-100E□□471MJC5S
	560	10 X12.5	12	5,300	APS-100E□□561MJC5S
16	100	8 X11.5	16	4,360	APS-160E□□101MHB5S
	180	8 X11.5	16	4,360	APS-160E□□181MHB5S
	270	10 X12.5	14	5,050	APS-160E□□271MJC5S
	330	10 X12.5	14	5,050	APS-160E□□331MJC5S
20	100	8 X11.5	24	3,320	APS-200E□□101MHB5S
	150	10 X12.5	20	4,320	APS-200E□□151MJC5S
25	68	8 X11.5	24	3,320	APS-250E□□680MHB5S
	100	10 X12.5	20	4,320	APS-250E□□101MJC5S
35	18	8 X11.5 S	34	2,830	APS-350E□□180MHB5S
	33	10 X12.5	30	3,270	APS-350E□□330MJC5S

□□ : Enter the appropriate lead forming or taping code.