

## NPCAP™-PSE Series

- Super low ESR, high ripple current capability
- Downsized from PSC series ( $\phi 8 \times 8L$  to  $\phi 6.3 \times 8L$ )
- Endurance is longer life than PSC series (5,000 hours at 105°C)
- ESR after endurance is specified within the initial spec
- Rated voltage range : 2.5 to 6.3Vdc
- RoHS Compliant
- Halogen Free

Halogen Free  
Downsized  
Long Life



## ◆SPECIFICATIONS

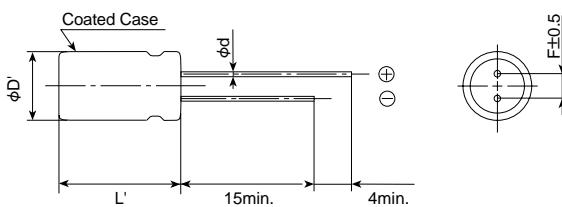
Items	Characteristics																	
<b>Category</b>																		
<b>Temperature Range</b>	-55 to +105°C																	
<b>Rated Voltage Range</b>	2.5 to 6.3Vdc																	
<b>Capacitance Tolerance</b>	$\pm 20\%$ (M) (at 20°C, 120Hz)																	
<b>Surge Voltage</b>	Rated voltage(V) $\times 1.15$ (at 105°C)																	
<b>Leakage Current</b>	I=0.2CV or 500 $\mu$ A, whichever is greater Where, I : Leakage current ( $\mu$ A), C : Nominal capacitance ( $\mu$ F), V : Rated voltage (V) (at 20°C after 2 minutes)																	
<b>*Note</b>																		
<b>Dissipation Factor (tan<math>\delta</math>)</b>	0.10 max. (at 20°C, 120Hz)																	
<b>Low Temperature Characteristics (Max.Impedance Ratio)</b>	Z(-25°C)/Z(+20°C) $\leq 1.15$ Z(-55°C)/Z(+20°C) $\leq 1.25$ (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 5,000 hours at 105°C. <table border="1" data-bbox="317 932 856 1066"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td><math>\leq \pm 20\%</math> of the initial value</td> </tr> <tr> <td>D.F. (tan<math>\delta</math>)</td> <td><math>\leq</math> The initial specified value</td> </tr> <tr> <td>ESR</td> <td><math>\leq</math> The initial specified value</td> </tr> <tr> <td>Leakage current</td> <td><math>\leq</math> The initial specified value</td> </tr> </table>		Appearance	No significant damage	Capacitance change	$\leq \pm 20\%$ of the initial value	D.F. (tan $\delta$ )	$\leq$ The initial specified value	ESR	$\leq$ The initial specified value	Leakage current	$\leq$ 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" data-bbox="317 1123 856 1257"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td><math>\leq \pm 20\%</math> of the initial value</td> </tr> <tr> <td>D.F. (tan<math>\delta</math>)</td> <td><math>\leq</math> The initial specified value</td> </tr> <tr> <td>ESR</td> <td><math>\leq</math> The initial specified value</td> </tr> <tr> <td>Leakage current</td> <td><math>\leq</math> The initial specified value</td> </tr> </table>		Appearance	No significant damage	Capacitance change	$\leq \pm 20\%$ of the initial value	D.F. (tan $\delta$ )	$\leq$ The initial specified value	ESR	$\leq$ The initial specified value	Leakage current	$\leq$ 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" data-bbox="317 1313 856 1448"> <tr> <td>Appearance</td> <td>No significant damage</td> </tr> <tr> <td>Capacitance change</td> <td><math>\leq \pm 20\%</math> of the initial value</td> </tr> <tr> <td>D.F. (tan<math>\delta</math>)</td> <td><math>\leq</math> The initial specified value</td> </tr> <tr> <td>ESR</td> <td><math>\leq</math> The initial specified value</td> </tr> <tr> <td>Leakage current</td> <td><math>\leq</math> The initial specified value</td> </tr> </table>		Appearance	No significant damage	Capacitance change	$\leq \pm 20\%$ of the initial value	D.F. (tan $\delta$ )	$\leq$ The initial specified value	ESR	$\leq$ The initial specified value	Leakage current	$\leq$ The initial specified value						
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<b>Halogen Free (Definition)</b>	All homogeneous materials within a capacitor meet the criteria in Table-1 and Table-2. Homogeneous material has uniform composition throughout and cannot be mechanically disjointed into different materials. Table-1 Table-2 <table border="1" data-bbox="317 1516 1396 1605"> <tr> <td>Substance</td> <td>Permissible limit (by weight)</td> <td>Substance</td> <td>Permissible limit (by weight)</td> </tr> <tr> <td>Bromine (Br)</td> <td><math>\leq 900\text{ppm}</math> (0.09%)</td> <td>Antimony Trioxide (<math>\text{Sb}_2\text{O}_3</math>)</td> <td><math>\leq 1,000\text{ppm}</math> (0.10%)</td> </tr> <tr> <td>Chlorine (Cl)</td> <td><math>\leq 900\text{ppm}</math> (0.09%)</td> <td>Red Phosphorus</td> <td><math>\leq 1,000\text{ppm}</math> (0.10%)</td> </tr> <tr> <td>Total concentration of Chlorine (Cl) + Bromine (Br)</td> <td><math>\leq 1,500\text{ppm}</math> (0.15%)</td> <td></td> <td></td> </tr> </table>		Substance	Permissible limit (by weight)	Substance	Permissible limit (by weight)	Bromine (Br)	$\leq 900\text{ppm}$ (0.09%)	Antimony Trioxide ( $\text{Sb}_2\text{O}_3$ )	$\leq 1,000\text{ppm}$ (0.10%)	Chlorine (Cl)	$\leq 900\text{ppm}$ (0.09%)	Red Phosphorus	$\leq 1,000\text{ppm}$ (0.10%)	Total concentration of Chlorine (Cl) + Bromine (Br)	$\leq 1,500\text{ppm}$ (0.15%)		
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Total concentration of Chlorine (Cl) + Bromine (Br)	$\leq 1,500\text{ppm}$ (0.15%)																	
<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.

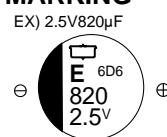
## ◆DIMENSIONS [mm]

- Terminal Code : E



Size code	F08
$\phi D$	6.3
$\phi d$	0.6
F	2.5
$\phi D'$	$\phi D + 0.5\text{max.}$
$L'$	$L + 1.5\text{max.}$

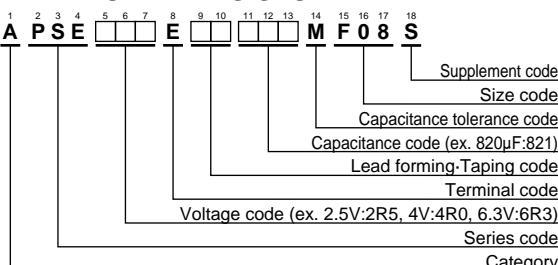
## ◆MARKING



Specifications in this bulletin are subject to change without notice.

## NPCAP™-PSE Series

## ◆PART NUMBERING SYSTEM



## ◆STANDARD RATINGS

WV(V <sub>dc</sub> )	Cap(μF)	Case size ΦDXL(mm)	ESR (mΩ max./20°C, 100k to 300kHz)	Rated ripple current (mAmps/105°C, 100kHz)	Part No.
2.5	820	6.3X8	7	5,000	APSE2R5E□□821MF08S
4	560	6.3X8	7	5,000	APSE4R0E□□561MF08S
6.3	470	6.3X8	8	4,700	APSE6R3E□□471MF08S
	560	6.3X8	8	4,700	APSE6R3E□□561MF08S

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

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