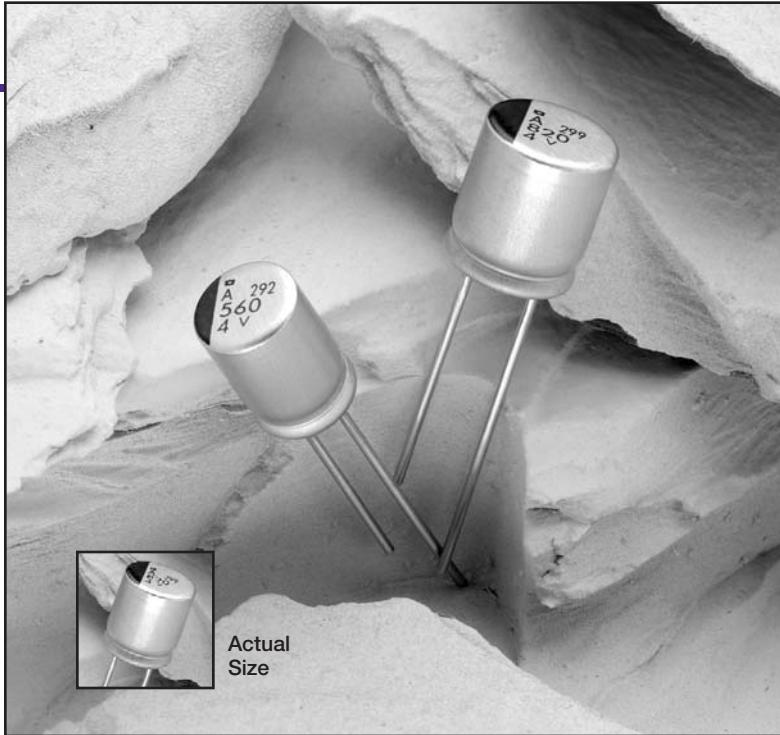


# PSA Series

UNITED  
CHEMI-CON

PSA POLYMER  
ALUMINUM RADIAL

- **Solid Functional Polymer Aluminum**
- **Radial Lead**
- **Super Low ESR**
- **Lead-Free Construction**
- **+105°C Maximum Temperature**



The PSA series is a radial lead miniature aluminum series that uses a solid functional polymer as the electrolyte. This polymer technology insures more stable performance and higher reliability over the expected lifetime than normal liquid electrolyte capacitors. The PSA capacitors offer super low ESR ratings, high temperature resistance, and high ripple current capability. These capacitors have standard heavy-duty 0.8mm diameter wire leads and are constructed of lead-free materials that can withstand high temperature lead-free alloy soldering. A smaller Ø6.3 x 9.8mm size is now available in various capacitance and voltage ratings. The PSA capacitors are suitable for use in DC-DC converters, voltage regulators, and decoupling applications.

The PSA series capacitors are solvent proof. Refer to the Mini-Glossary for cleaning guidelines and recommended cleaning agents that are compatible with United Chemi-Con products.

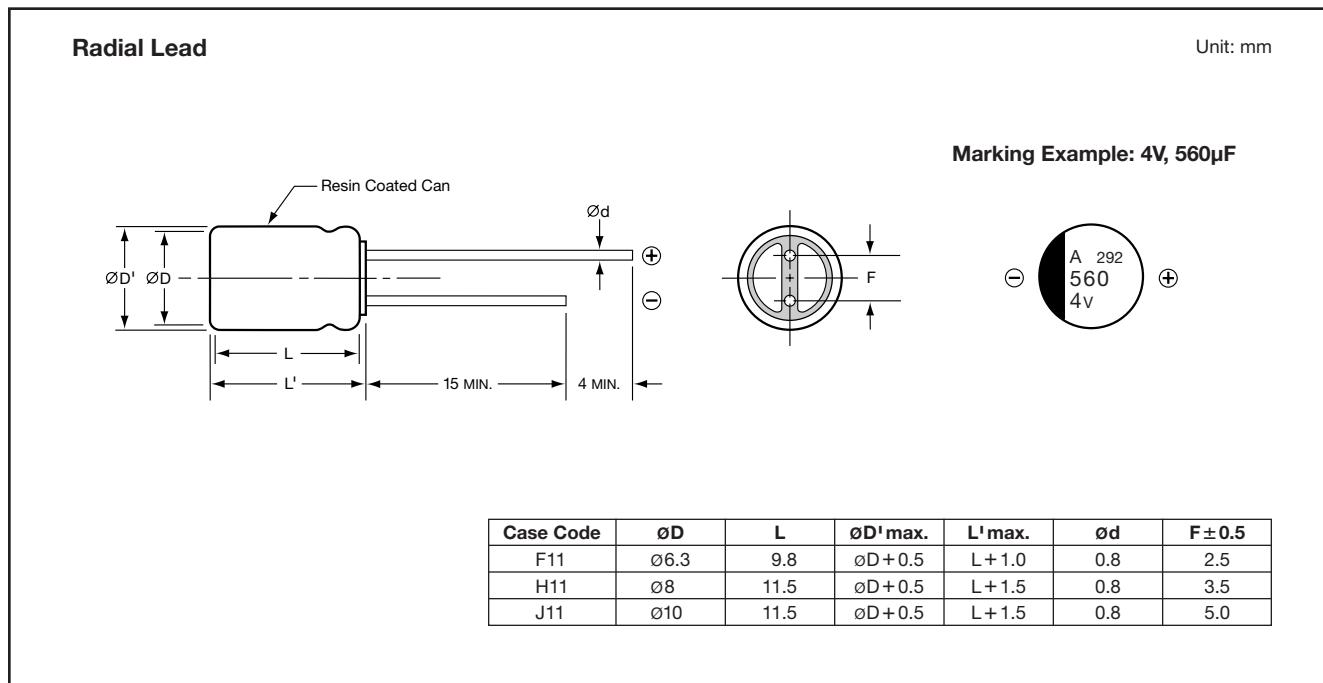
## Summary of Specifications

- Radial leads, standard 0.8mm diameter for all models.
- Capacitance range: 47 to 1,000µF.
- Voltage range: 2.5 to 16VDC.
- Category temperature range: -55°C to +105°C.
- Leakage current: 0.2CV maximum after 2 minutes at +20°C.
- Standard capacitance tolerance: ±20%
- Nominal case size (D x L): 6.3 x 9.8mm, 8 x 11.5mm and 10 x 11.5mm.
- Rated lifetime: 2,000 hours at +105°C.

## PSA Specifications

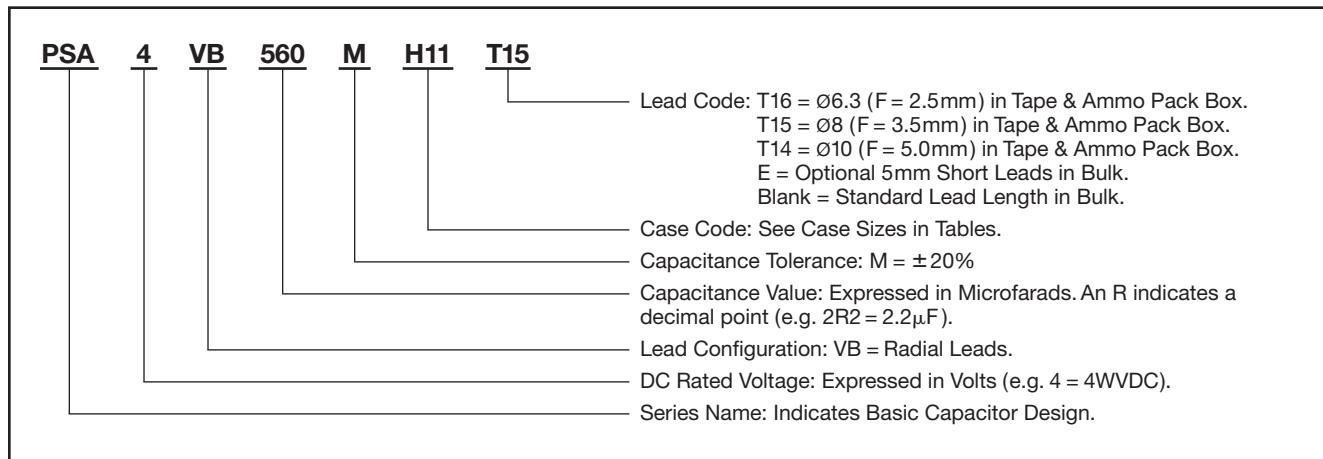
Item	Characteristics						
Category Temperature Range	–55 to +105°C						
Rated Voltage Range	2.5 to 16VDC						
Capacitance Range	47 to 1,000 $\mu$ F						
Capacitance Tolerance	$\pm 20\%$ (M) at +20°C, 120Hz						
Leakage Current	I = 0.2CV maximum after 2 minutes at +20°C. To verify maximum leakage current, apply the DC rated voltage to the capacitors for 120 minutes at +105°C before measurement. Where I = Max. leakage current ( $\mu$ A), C = Nominal capacitance ( $\mu$ F) and V = Rated voltage (V)						
Dissipation Factor (Tan $\delta$ )	0.08 maximum (0.12 maximum for Size F11) at +20°C, 120Hz						
Low Temperature Characteristics	At 100kHz, impedance (Z) ratio between the –25°C or –55°C value and +20°C value shall not exceed the values given below. <table border="1" data-bbox="575 574 913 670"> <tr> <td>Rated Voltage (V)</td> <td>2.5-16</td> </tr> <tr> <td>Z(–25°C) / Z(+20°C)</td> <td><math>\leq 1.15</math></td> </tr> <tr> <td>Z(–55°C) / Z(+20°C)</td> <td><math>\leq 1.25</math></td> </tr> </table>	Rated Voltage (V)	2.5-16	Z(–25°C) / Z(+20°C)	$\leq 1.15$	Z(–55°C) / Z(+20°C)	$\leq 1.25$
Rated Voltage (V)	2.5-16						
Z(–25°C) / Z(+20°C)	$\leq 1.15$						
Z(–55°C) / Z(+20°C)	$\leq 1.25$						
Endurance (Load Life)	The following specifications shall be satisfied when the capacitors are restored to +20°C after subjecting them to the DC rated voltage for 2,000 hours at +105°C. Appearance : no significant damage Capacitance change: $\leq \pm 20\%$ of initial measured value Tan $\delta$ (DF) : $\leq 150\%$ of initial specified value ESR : $\leq 150\%$ of initial specified value Leakage current : $\leq$ initial specified value						
Bias Humidity Test	The following specifications shall be satisfied when the capacitors are restored to +20°C after subjecting them to the DC rated voltage for the specified test time at +60°C, 90-95%RH. <table border="1" data-bbox="575 962 1106 1018"> <tr> <td>Case Code</td> <td>F11</td> <td>H11 &amp; J11</td> </tr> <tr> <td>Test Time</td> <td>500 Hours</td> <td>1,000 Hours</td> </tr> </table> Appearance : no significant damage Capacitance change: $\leq \pm 20\%$ of initial measured value Tan $\delta$ (DF) : $\leq 150\%$ of initial specified value ESR : $\leq 150\%$ of initial specified value Leakage current : $\leq$ initial specified value	Case Code	F11	H11 & J11	Test Time	500 Hours	1,000 Hours
Case Code	F11	H11 & J11					
Test Time	500 Hours	1,000 Hours					
Surge Voltage Test	The following specifications shall be satisfied when the capacitors are restored to +20°C after the surge voltage at +105°C is applied through a protective resistor of 1,000 ohms at a cycling of 30 seconds on, 5.5 minutes off for 1,000 cycles. The surge voltage shall not exceed 115% of the rated voltage. Appearance : no significant damage Capacitance change: $\leq \pm 20\%$ of initial measured value Tan $\delta$ (DF) : $\leq 150\%$ of initial specified value ESR : $\leq 150\%$ of initial specified value Leakage current : $\leq$ initial specified value						
Failure Rate	1% maximum per 1,000 hours at +105°C with rated voltage applied. (Confidence level 60%)						

## Diagram of Dimensions



## Part Numbering System for PSA Series

When ordering, always specify complete catalog number for PSA Series.\*



\*Please consult United Chemi-Con for additional taping and ammo box specifications and lead cut/forming options and coding.

## Standard Voltage Ratings - Radial Lead

Rated Voltage (WVDC)	Capacitance ( $\mu$ F)	Catalog Part Number	Nominal Case Size* D x L (mm)	Case Code	Maximum ESR (m $\Omega$ ) at +20°C 100k-300kHz	Rated Ripple Current (mA rms) at +105°C, 100kHz
2.5 Volts 2.9 Volts Surge	390	PSA2.5VB390MF11	6.3 x 9.8	F11	20	3,160
	680	PSA2.5VB680MH11	8 x 11.5	H11	7	5,580
	820	PSA2.5VB820MH11	8 x 11.5	H11	7	5,580
	1,000	PSA2.5VB1000MJ11	10 x 11.5	J11	6	5,860
4 Volts 4.6 Volts Surge	270	PSA4VB270MF11	6.3 x 9.8	F11	20	3,160
	390	PSA4VB390MF11	6.3 x 9.8	F11	24	3,300
	560	PSA4VB560MH11	8 x 11.5	H11	7	5,580
	820	PSA4VB820MJ11	10 x 11.5	J11	6	5,860

\*Refer to diagram for detailed case sizes.

# PSA Series

## Standard Voltage Ratings - Radial Lead

Rated Voltage (WVDC)	Capacitance (μF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Case Code	Maximum ESR (mΩ) at +20°C 100k-300kHz	Rated Ripple Current (mA rms) at +105°C, 100kHz
<b>6.3 Volts</b> <b>7.2 Volts Surge</b>	220	PSA6.3VB220MF11	6.3 × 9.8	F11	20	3,160
	330	PSA6.3VB330MF11	6.3 × 9.8	F11	28	3,190
	390	PSA6.3VB390MH11	8 × 11.5	H11	8	5,080
	680	PSA6.3VB680MJ11	10 × 11.5	J11	7	5,860
<b>10 Volts</b> <b>11.5 Volts Surge</b>	47	PSA10VB47MF11	6.3 × 9.8	F11	25	2,820
	68	PSA10VB68MF11	6.3 × 9.8	F11	25	2,820
	100	PSA10VB100MF11	6.3 × 9.8	F11	25	2,820
	150	PSA10VB150MF11	6.3 × 9.8	F11	25	2,820
	270	PSA10VB270MH11	8 × 11.5	H11	9	4,710
	470	PSA10VB470MJ11	10 × 11.5	J11	8	5,650
<b>16 Volts</b> <b>18.4 Volts Surge</b>	100	PSA16VB100MF11	6.3 × 9.8	F11	25	2,820

\*Refer to diagram for detailed case sizes.