

# Type SPA Solid Polymer Aluminum SMT Capacitors

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- Ultra-Low ESR – 5 m $\Omega$  to 9 m $\Omega$  @ 100 kHz
- High Ripple current – up to 4.0 Arms at 100 kHz
- Long Life – No dry out failure related mechanism
- Stable Impedance and ESR vs. Temperature
- Great for bulk storage and ripple filtering
- Ignition free

## Applications

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**Motherboard By-Pass**

**Switching Supply Input/Output Filters**

**Power Supply Decoupling**

**High Frequency Noise Reduction**

**Laptop LCD Displays**

**Automotive Digital Equipment**

**Portable Electronic Equipment**

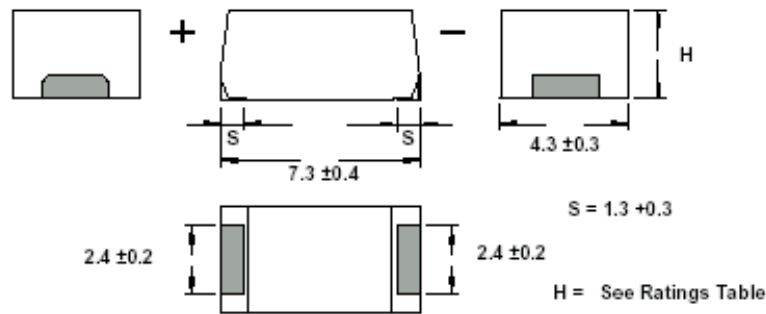
## Specifications

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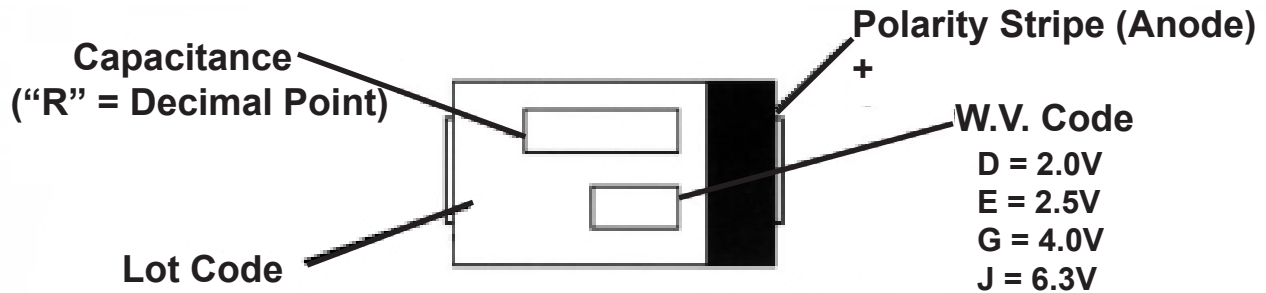
<b>Operating Temperature:</b>	-40 °C to +105 °C
<b>Rated Voltage:</b>	2 Vdc to 6.3 Vdc
<b>Surge Voltage:</b>	1.25 x Rated Voltage
<b>Capacitance Range:</b>	56 $\mu$ F to 470 $\mu$ F
<b>Capacitance Tolerance:</b>	$\pm$ 20% @120 Hz, +20 °C
<b>Dissipation Factor:</b>	0.06 max (1.8/1.9); 0.10 max (2.8/4.2) (Case "H" mm; 120 Hz +20 °C)
<b>DC Leakage Current:</b>	$I \leq 0.06$ CV after 2 minutes
<b>Load Life:</b>	1000 h @ 105 °C $\Delta$ Capacitance: $\pm$ 10% of the initial measured value D.F. $\leq$ Initial specified value DCL $\leq$ Initial specified value

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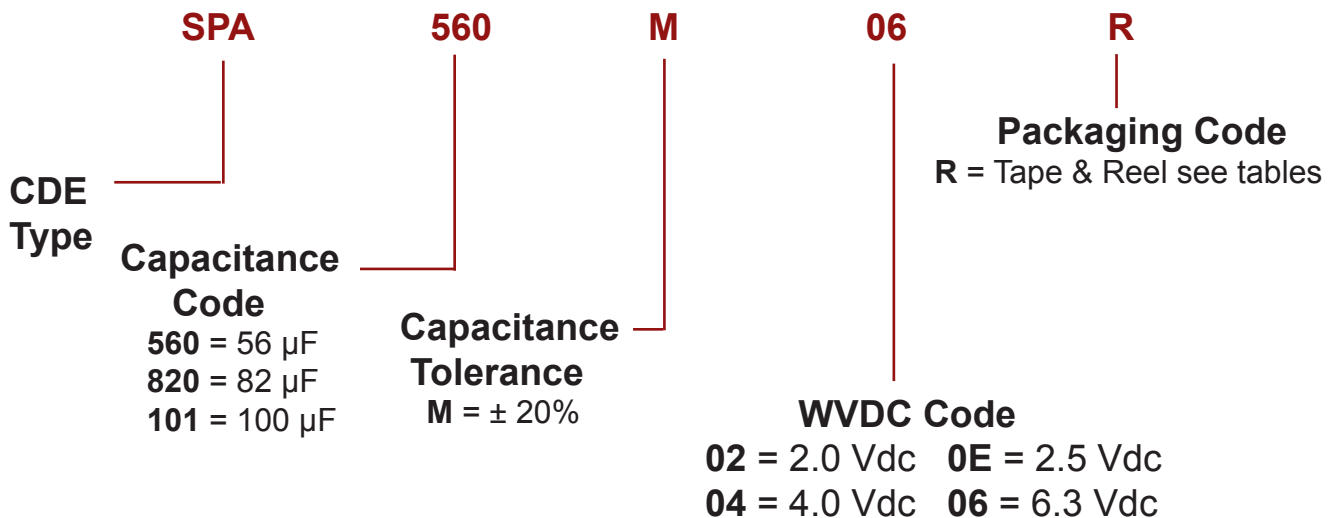
## Outline Drawing



## Markings



## Ordering Information



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## Ratings

Capacitance ( $\mu\text{F}$ )	Catalog Part Number (Tape & Reel)	Maximum E.S.R. 100 kHz/20 °C ( $\Omega$ )	Maximum Ripple Current 100 kHz/105 °C ( $A_{\text{rms}}$ )	Case Height H (mm)	Qty/Reel
<b>2.0 Vdc</b>					
120	SPA121M02R	0.009	3.0	1.8 $\pm$ 1	3500
150	SPA151M02R	0.009	3.0	1.8 $\pm$ 1	3500
180	SPA181M02R	0.009	3.0	1.9 $\pm$ 2	3500
270	SPA271M02R	0.007	3.5	2.8 $\pm$ 2	2000
330	SPA331M02R	0.007	3.5	2.8 $\pm$ 2	2000
390	SPA391M02R	0.005	4.0	4.2 $\pm$ 1	2000
470	SPA471M02R**	0.005	4.0	4.2 $\pm$ 1	2000
<b>2.5 Vdc</b>					
100	SPA101M0ER	0.009	3.0	1.8 $\pm$ 1	3500
120	SPA121M0ER	0.009	3.0	1.8 $\pm$ 1	3500
150	SPA151M0ER	0.009	3.0	1.9 $\pm$ 2	3500
220	SPA221M0ER	0.007	3.5	2.8 $\pm$ 2	2000
270	SPA271M0ER	0.007	3.5	2.8 $\pm$ 2	2000
330	SPA331M0ER	0.005	4.0	4.2 $\pm$ 1	2000
390	SPA391M0ER	0.005	4.0	4.2 $\pm$ 1	2000
<b>4.0 Vdc</b>					
82	SPA820M04R	0.009	3.0	1.8 $\pm$ 1	3500
100	SPA101M04R	0.009	3.0	1.9 $\pm$ 2	3500
150	SPA151M04R	0.007	3.5	2.8 $\pm$ 2	2000
220	SPA221M04R	0.005	4.0	4.2 $\pm$ 1	2000
<b>6.3 Vdc</b>					
56	SPA560M06R	0.009	3.0	1.8 $\pm$ 1	3500
68	SPA680M06R	0.009	3.0	1.9 $\pm$ 2	3500
120	SPA121M06R	0.007	3.5	2.8 $\pm$ 2	2000
180	SPA181M06R	0.005	4.0	4.2 $\pm$ 1	2000

Highlighted part numbers no longer available

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