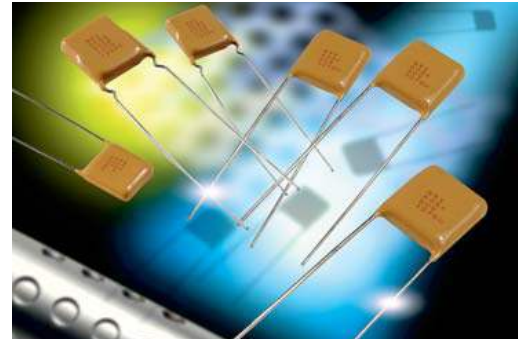


# SMPS Capacitors

## SE Style – Extended Commercial Radial Range

### PRODUCT OFFERING – X7R

AVX SE styles offer capacitance extension to popular SK ranges. The CV product for SE-series, X7R capacitors (TCC:  $\pm 15\%$  over  $-55$  to  $+125^\circ\text{C}$ ) compares favorably to high CV ranges offered by other suppliers in much less stable Y5U dielectric (TCC:  $+22/-56\%$  over  $-30$  to  $+85^\circ\text{C}$ ). SE style capacitors are conformally coated and are designed for input and output filtering applications in switch mode power supplies.



### ELECTRICAL SPECIFICATIONS

#### Temperature Coefficient

X7R: Temperature Coefficient  $\pm 15\%$ ,  $-55^\circ$  to  $+125^\circ\text{C}$

#### Capacitance Test (MIL-STD-202 Method 305)

X7R:  $25^\circ\text{C}$ ,  $1.0 \pm 0.2$  Vrms (open circuit voltage) at 1KHz

#### Dissipation Factor $25^\circ\text{C}$

X7R: 2.5% Max @  $25^\circ\text{C}$ ,  $1.0 \pm 0.2$  Vrms (open circuit voltage) at 1KHz

#### Insulation Resistance $25^\circ\text{C}$ (MIL-STD-202 Method 302)

X7R: 100K M $\Omega$  or 1000 M $\Omega$ - $\mu\text{F}$ , whichever is less.

#### Insulation Resistance $125^\circ\text{C}$ (MIL-STD-202 Method 302)

X7R: 10K M $\Omega$  or 100 M $\Omega$ - $\mu\text{F}$ , whichever is less.

#### Dielectric Withstanding Voltage $25^\circ\text{C}$ (Flash Test)

X7R: 250% rated voltage for 5 seconds with 50 mA max charging current.

#### Life Test (1000 hrs)

X7R: 200% rated voltage at  $+125^\circ\text{C}$

#### Moisture Resistance (MIL-STD-202 Method 106)

X7R: Ten cycles with no voltage applied.

#### Thermal Shock (MIL-STD-202 Method 107, Condition A)

X7R: Immersion Cycling (MIL-STD-202 Method 104, Condition B)

#### Resistance To Solder Heat (MIL-STD-202, Method 210, Condition B, for 20 seconds)

### HOW TO ORDER

<b>SE</b>	<b>01</b>	<b>3</b>	<b>C</b>	<b>125</b>	<b>M</b>	<b>A</b>	<b>A</b>	<b>*</b>
Style	Size See chart below	Voltage 25V = 3 50V = 5 100V = 1	Temperature Coefficient X7R = C	Capacitance Code (2 significant digits + no. of zeros) 22 nF = 223 220 nF = 224 1 $\mu\text{F}$ = 105 100 $\mu\text{F}$ = 107	Capacitance Tolerance X7R: K = $\pm 10\%$ M = $\pm 20\%$ Z = $+80, -20\%$	Test Level A = Standard	Leads A = Tin/Lead R = RoHS Compliant*	Packaging (See Note 1)

Note 1: No suffix signifies bulk packaging, which is AVX standard packaging. Parts available tape and reel per EIA-468. Use suffix "TR1" if tape & reel is required.

Note: Capacitors with X7R dielectrics are not intended for applications across AC supply mains or AC line filtering with polarity reversal. Contact plant for recommendations.

\*Hi-Rel screening consists of 100% Group A, Subgroup 1 per MIL-PRF-39014.

TAPE & REEL QUANTITY	
Part	Pieces
SE01	2000
SE03/SE53	1000
SE04/SE54	1000
SE05/SE55	500
SE06/SE56	500

RoHS	
Part	Available
SE01	Yes
SE03/SE53	Yes
SE04/SE54	Yes
SE05/SE55	Yes
SE06/SE56	Yes

**Not RoHS Compliant**

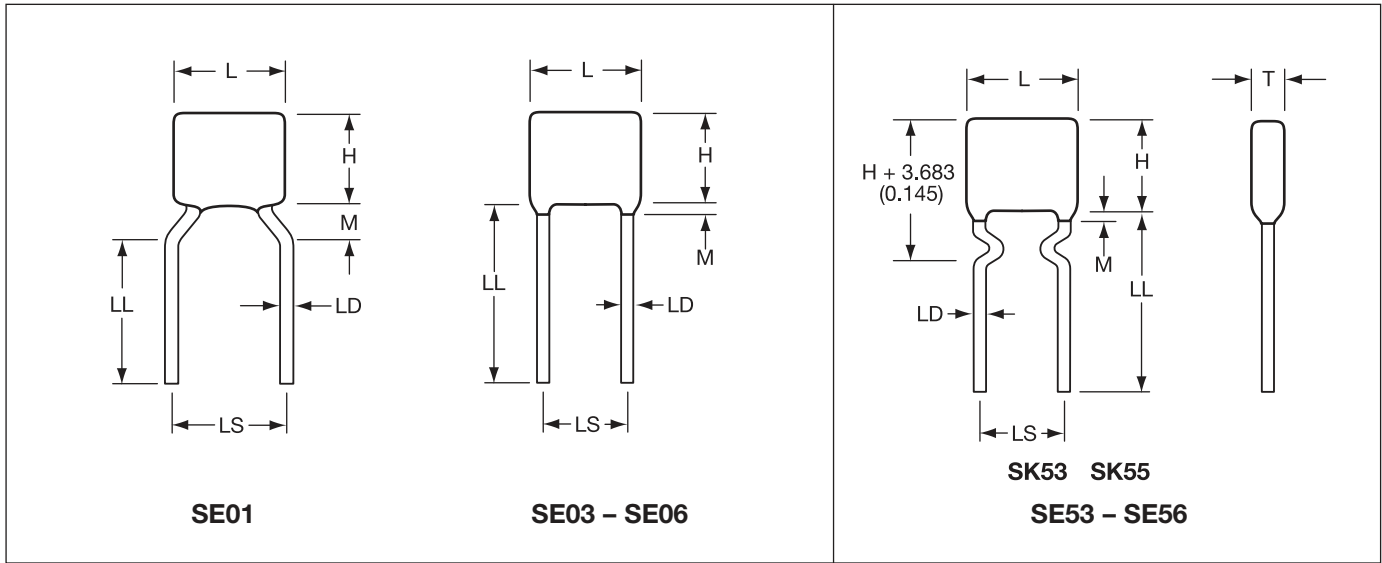


For RoHS compliant products, please select correct termination style.

Performance of SMPS capacitors can be simulated by downloading SpiCalci software program - <http://www.avx.com/download/software/SpiCalci-AVX.zip>  
Custom values, ratings and configurations are also available.

# SMPS Capacitors

## SE Style – Product Offering – X7R



### X7R Capacitance Range (µF)

Style	25 WVDC min./max.	50 WVDC min./max.	100 WVDC min./max.
SE01	0.47/1.5	0.39/1.0	0.33/0.68
SE03/SE53	2.7/6.8	2.2/4.7	1.8/3.3
SE04/SE54	5.6/12	3.9/10	3.3/6.8
SE05/SE55	8.2/18	6.8/12	4.7/10.0
SE06/SE56	18/39	12/27	6.8/15

## DIMENSIONS

millimeters (inches)

Style	L (max.)	H (max.)	T (max.)	LS (nom.)	LD (nom.)
SE01	5.08 (0.200)	5.08 (0.200)	5.08 (0.200)	5.08 (0.200)	0.508 (0.020)
SE03/SE53	7.62 (0.300)	7.62 (0.300)	5.08 (0.200)	5.08 (0.200)	0.508 (0.020)
SE04/SE54	10.2 (0.400)	10.2 (0.400)	5.08 (0.200)	5.08 (0.200)	0.508 (0.020)
SE05/SE55	12.7 (0.500)	12.7 (0.500)	5.08 (0.200)	10.2 (0.400)	0.635 (0.025)
SE06/SE56	22.1 (0.870)	15.2 (0.600)	5.08 (0.200)	20.1 (0.790)	0.813 (0.032)
L = Length H = Height		T = Thickness M = Meniscus 1.52 (0.060) max.		LS = Lead Spacing Nominal $\pm 0.787 (0.031)$ LL = Lead Length 50.8 (2.000) max./25.4 (1.000) min. LD = Lead Diameter Nominal $\pm 0.050 (0.002)$	