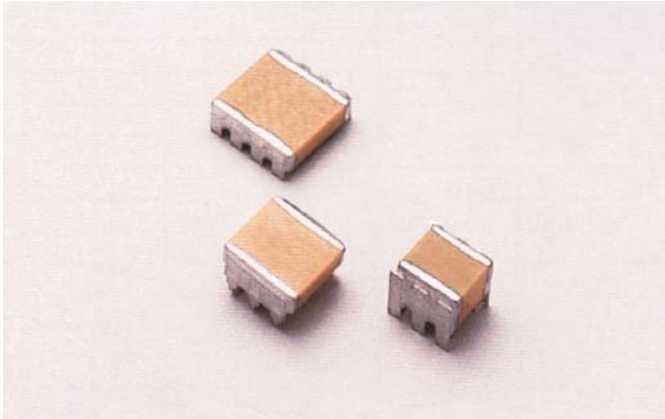


# SMPS Capacitors (RH Style)



European Preferred Styles

## RH - Surface Mount 'J' Lead Range



0.047  $\mu$ F to 22.0  $\mu$ F      Low ESR/ESL  
 50V to 500 VDC              X7R Dielectric  
 -55°C to +125°C

This range of uncoated MLC capacitors are processed for input and output filter capacitors in high frequency DC-DC convertor applications above 10 Watts e.g. telecomms and instrumentation, where high volume and low cost is required. These products are available in surface mount 'J' leaded versions and can be supplied in bulk and tape/reel packaging.

### ELECTRICAL SPECIFICATIONS

**Temperature Coefficient** CECC 30 000, (4.24.1)  
 X7R: C Temperature Characteristic -  $\pm$  15%, -55°C to +125°C

**Capacitance Test**  
 Measured at 1 VRMS max at 1KHz

**Dissipation Factor 25°C**  
 2.5% max at 1KHz, 1 VRMS max

**Insulation Resistance 25°C**  
 100K megohms or 1000 megohms- $\mu$ F, whichever is less

**Dielectric Withstanding Voltage 25°C** (Flash Test)  
 250% rated voltage for 5 seconds with 50 mA max charging current. (500 Volt units @ 150% rated voltage)

**Life Test** (1000 hrs) CECC 30 000 (4.23)  
 200% rated voltage at +125°C.  
 (500 Volt units @ 120% rated voltage)

**Thermal Shock** IEC 68.2.14  
 -55°C to +125°C, 5 cycles

**Resistance to Solder Heat** IEC 68.2.20

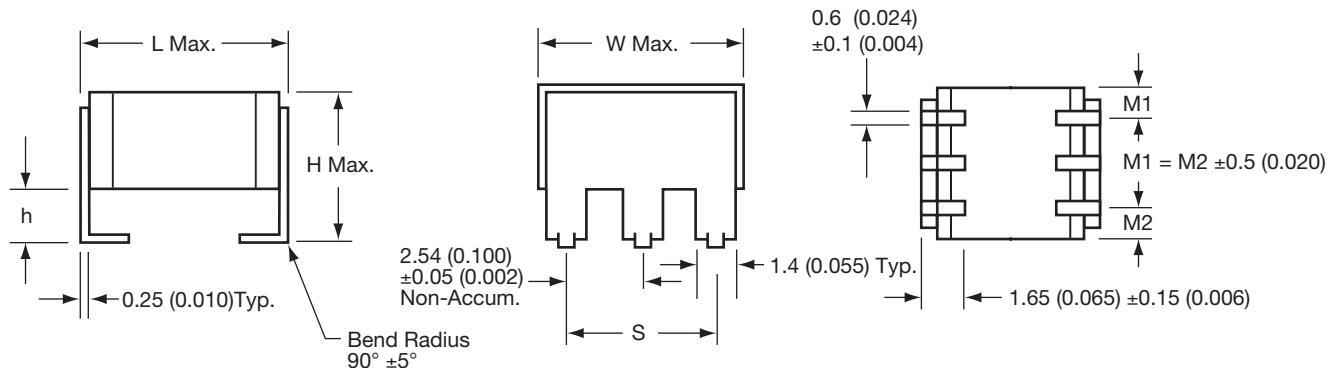
Typical ESR (m $\Omega$ ) 3 $\mu$ F, 100V X7R	
ESR @ 100KHz	17
ESR @ 500KHz	12
ESR @ 1MHz	14

### DIMENSIONS

millimeters (inches)

Style	L max	W max	H max	S $\pm$ 0.1 ( $\pm$ 0.004)	h	No. of leads per side
RH21	7.62 (0.300)	5.40 (0.213)	4.60 (0.181)	2.50 (0.098)	1.50 $\pm$ 0.30 (0.059 $\pm$ 0.012)	2
RH22	7.62 (0.300)	5.40 (0.213)	7.50 (0.295)	2.50 (0.098)	1.50 $\pm$ 0.30 (0.059 $\pm$ 0.012)	2
RH31	7.62 (0.300)	7.00 (0.270)	5.08 (0.200)	5.08 (0.200)	1.78 $\pm$ 0.25 (0.070 $\pm$ 0.010)	3
RH32	7.62 (0.300)	7.00 (0.270)	8.13 (0.320)	5.08 (0.200)	1.78 $\pm$ 0.25 (0.070 $\pm$ 0.010)	3
RH41	9.20 (0.362)	8.70 (0.342)	4.90 (0.192)	5.08 (0.200)	1.60 $\pm$ 0.10 (0.062 $\pm$ 0.004)	3
RH42	9.20 (0.362)	8.70 (0.342)	8.20 (0.323)	5.08 (0.200)	1.60 $\pm$ 0.10 (0.062 $\pm$ 0.004)	3
RH51	10.7 (0.421)	10.7 (0.421)	4.90 (0.192)	7.62 (0.300)	1.60 $\pm$ 0.10 (0.062 $\pm$ 0.004)	4
RH52	10.7 (0.421)	10.7 (0.421)	8.20 (0.323)	7.62 (0.300)	1.60 $\pm$ 0.10 (0.062 $\pm$ 0.004)	4
RH61	14.9 (0.586)	13.6 (0.535)	4.90 (0.192)	10.2 (0.400)	1.60 $\pm$ 0.10 (0.062 $\pm$ 0.004)	5
RH62	14.9 (0.586)	13.6 (0.535)	8.20 (0.323)	10.2 (0.400)	1.60 $\pm$ 0.10 (0.062 $\pm$ 0.004)	5

### DIMENSIONS millimeters (inches)



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### X7R STABLE DIELECTRIC

Cap $\mu$ F	RH21/RH22 Style				RH31/RH32 Style				RH41/RH42 Style				RH51/RH52 Style				RH61/RH62 Style			
	50	100	200	500	50	100	200	500	50	100	200	500	50	100	200	500	50	100	200	500
0.047																				
0.056																				
0.068								RH31												
0.082																				
0.1																				
0.12																				
0.15																				
0.18								RH32						RH41						
0.22																				
0.27								RH31						RH42						
0.33																				
0.39																				
0.47														RH41						
0.56								RH32												
0.68																				
0.78																				
0.82																				
1								RH31												
1.2																				
1.5																				
1.8																				
2.2								RH32												
2.7																				
3																				
3.3																				
3.9																				
4.4																				
4.7																				
5.6																				
6.8																				
8.2																				
10																				
12																				
15																				
18																				
22																				
27																				

For availability of further parts in the RH21/RH22 Series, contact manufacturing.

### PACKAGING

Style	Qty/Reel 13"	Max. Qty/Waffle Pack
RH21	800	270
RH22	500	270
RH31	800	108
RH32	500	108
RH41	800	108
RH42	see note	100
RH51	750	88
RH52	see note	88
RH61	500	42
RH62	see note	42

Note: T&R is not yet available. Contact manufacturing for further information as this will be available in the future.

### HOW TO ORDER

<b>RH</b>	<b>31</b>	<b>5</b>	<b>C</b>	<b>225</b>	<b>M</b>	<b>A</b>	<b>3</b>	<b>0</b>	<b>A</b>	<b>3</b>
<b>Style Code</b> (see table above)	<b>Size Code</b>	<b>Voltage Code</b> 5 = 50V 1 = 100V 2 = 200V 7 = 500V	<b>Dielectric Code</b> C = X7R	<b>Capacitance Code</b> (2 significant digits + no. of zeros) eg. 105 = 1 $\mu$ F 104 = 0.1 $\mu$ F	<b>Capacitance Tolerance</b> K = $\pm$ 10% M = $\pm$ 20%	<b>Specification Code</b> A = Non customized	<b>Package Code</b> 3 = Waffle Pack A = Tape & Reel	<b>Lead Dia. Code</b> 0 = Standard R = RoHS Compliant	<b>Lead Space Code</b> A = Standard	<b>Lead Style Code</b> 3 = 'J' Lead

