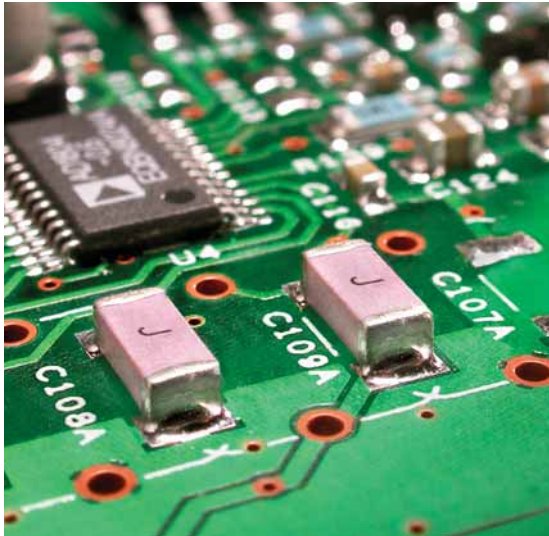


# SAFETY CERTIFIED CAPACITORS

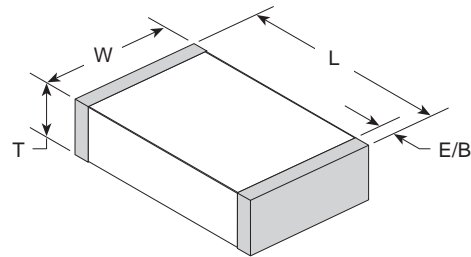


Johanson Dielectrics Type SC ceramic chip capacitors are designed for AC voltage surge and lightning protection in line-to-ground interface applications in computer network, modem, facsimile and other equipment.

Johanson's safety capacitor offering includes four different case sizes and NPO and X7R dielectric materials.

These devices are surface mount ready with barrier terminations and tape and reel packaging.

Additional information on capacitor safety ratings may be found below. Specific certification details may be found under each product listing on the facing page.



SAFETY RATING	VOLTAGE RATING	WITHSTANDING VOLTAGE	IMPULSE VOLTAGE	CASE SIZE	JOHANSON ORDERING P/N
X2/Y3	250 VAC	1,500 VAC	2,500 V	1808	302R29____V_E-****-SC
Y3	250 VAC	1,500 VAC	N/A	1812	302S43____V_E-****-SC
X1/Y2	250 VAC	1,500 VAC	5,000 V	1808	502R29____V_E-****-SC
Y2	250 VAC	1,500 VAC	5,000 V	2211	502R30____V_E-****-SC
X1/Y2	250 VAC	1,500 VAC	5,000 V	2220	502S47____V3E-****-SC

X Capacitors are defined as suitable for use in situations where failure of the capacitor would not lead to danger of electric shock.

Y Capacitors are defined as suitable for use in situations where failure of the capacitor could lead to danger of electric shock.

**NOW AVAILABLE** with Polyterm® soft termination option for demanding environments & processes. Visit our website for full details.


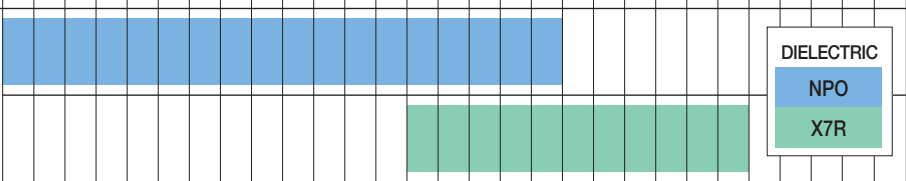
## HOW TO ORDER SAFETY CERTIFIED

302	R29	N	101	K	V	3	E - **** -	SC						
<b>IMPULSE VOLTAGE</b> 302 = 3000V 502 = 5000V	<b>SIZE</b> See Size Chart	<b>DIELECTRIC</b> N = NPO W = X7R	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros; 101 = 100 pF	<b>TOLERANCE</b> NPO: J = ± 5% K = ± 10% X7R: K = ± 10% M = ± 20%	<b>TERMINATION</b> V = Ni barrier w/ 100% Sn Plating	<b>MARKING</b> 3 = Special (J) 4 = No marking	<b>TAPE MODIFIER</b> <table border="1" style="font-size: small;"> <tr> <th>Code</th> <th>Tape</th> <th>Reel</th> </tr> <tr> <td>E</td> <td>Embossed</td> <td>7"</td> </tr> </table> Tape specifications conform to EIA RS481	Code	Tape	Reel	E	Embossed	7"	<b>TYPE</b> SC = Safety Certified
Code	Tape	Reel												
E	Embossed	7"												


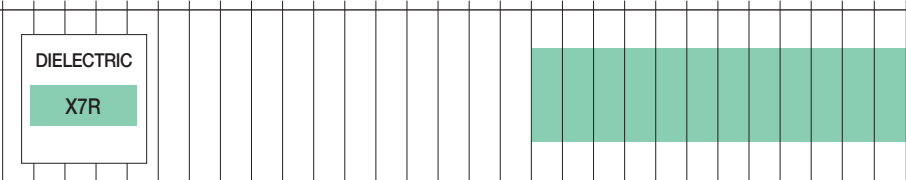
P/N written: 302R29N101KV3E-\*\*\*\*-SC




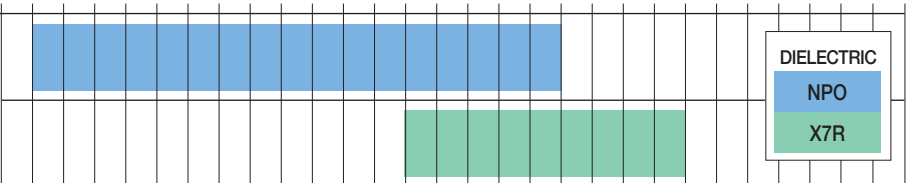
# SAFETY CERTIFIED CAPACITORS

			5 pF	10 pF	12 pF	15 pF	18 pF	22 pF	27 pF	33 pF	47 pF	56 pF	68 pF	100 pF	120 pF	150 pF	180 pF	220 pF	270 pF	330 pF	470 pF	560 pF	680 pF	1000 pF	1200 pF	1500 pF	1800 pF	2200 pF	2700 pF	3300 pF	4700 pF							
<b>R29 / 1808</b> 		INCHES	(mm)																																		<b>DIELECTRIC</b> NPO X7R	
	L	.180 ±.010	(4.57 ±.25)																																			
	W	.080 ±.010	(2.03 ±.25)																																			
	T	.080 Max.	(2.03)																																			
	E/B	.020 ±.010	(0.51±.25)																																			
<b>X2/Y3</b>	C	.125 Max.	(3.18)																																			


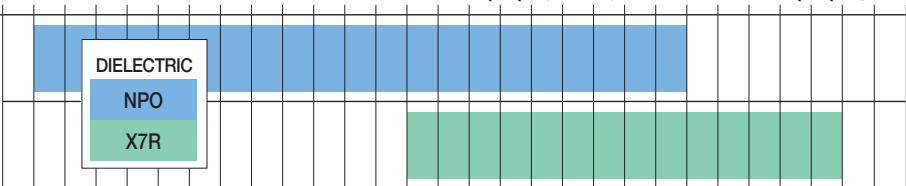
STANDARDS: EN132400:1994+A1, IEC 60384-14:1993+A1, EN 60950:1992+A1+A2+A3+A4+A11 • UL 1950, Third Edition  
 CERTIFICATIONS: TUV Rheinland T72051130 & T72041946 • UL File E212609 • Semko 0026092-1 & 0003222-1

			5 pF	10 pF	12 pF	15 pF	18 pF	22 pF	27 pF	33 pF	47 pF	56 pF	68 pF	100 pF	120 pF	150 pF	180 pF	220 pF	270 pF	330 pF	470 pF	560 pF	680 pF	1000 pF	1200 pF	1500 pF	1800 pF	2200 pF	2700 pF	3300 pF	4700 pF							
<b>S43 / 1812</b> 		INCHES	(mm)																																		<b>DIELECTRIC</b> X7R	
	L	.175 ±.010	(4.45 ±.25)																																			
	W	.125 ±.010	(3.17 ±.25)																																			
	T	.115 Max.	(2.92)																																			
	E/B	.025 ±.015	(0.64±.38)																																			
<b>Y3</b>																																						


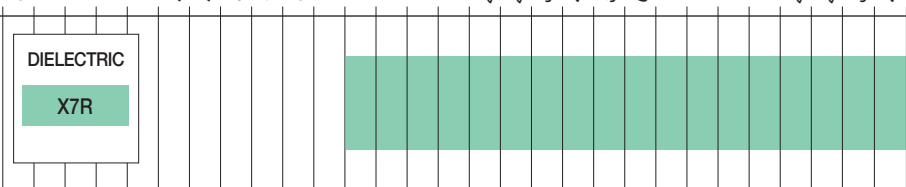
STANDARDS: EN132400:1994+A1, IEC 60384-14:1993+A1, EN 60950:1992+A1+A2+A3+A4+A11  
 CERTIFICATIONS: TUV Rheinland T72041946

			5 pF	10 pF	12 pF	15 pF	18 pF	22 pF	27 pF	33 pF	47 pF	56 pF	68 pF	100 pF	120 pF	150 pF	180 pF	220 pF	270 pF	330 pF	470 pF	560 pF	680 pF	1000 pF	1200 pF	1500 pF	1800 pF	2200 pF	2700 pF	3300 pF	4700 pF							
<b>R29 / 1808</b> 		INCHES	(mm)																																		<b>DIELECTRIC</b> NPO X7R	
	L	.189 ±.010	(4.80 ±.25)																																			
	W	.080 ±.010	(2.03 ±.25)																																			
	T	.085 Max.	(2.16)																																			
	E/B	.012 ±.005	(0.30±.13)																																			
<b>X1/Y2</b>																																						

STANDARDS: EN132400:1994+A2, IEC 60384-14:1993+A1 / UL60950-01, First Edition  
 CERTIFICATIONS: TUV Rheinland T72041313 & T72041314 / UL File E212609-A1-UL-1

			5 pF	10 pF	12 pF	15 pF	18 pF	22 pF	27 pF	33 pF	47 pF	56 pF	68 pF	100 pF	120 pF	150 pF	180 pF	220 pF	270 pF	330 pF	470 pF	560 pF	680 pF	1000 pF	1200 pF	1500 pF	1800 pF	2200 pF	2700 pF	3300 pF	4700 pF							
<b>R30 / 2211</b> 		INCHES	(mm)																																		<b>DIELECTRIC</b> NPO X7R	
	L	.225 ±.016	(5.72 ±.40)																																			
	W	.110 ±.010	(2.80 ±.25)																																			
	T	.115 Max.	(2.92)																																			
	E/B	.020 ±.010	(0.51±.25)																																			
<b>Y2</b>																																						

STANDARDS: EN132400:1994+A2, IEC 60384-14:1993+A1 • UL60950-01, First Edition  
 CERTIFICATIONS: TUV Rheinland T72041313 & T72041314 • UL File: E212609-A1-UL-1

			5 pF	10 pF	12 pF	15 pF	18 pF	22 pF	27 pF	33 pF	47 pF	56 pF	68 pF	100 pF	120 pF	150 pF	180 pF	220 pF	270 pF	330 pF	470 pF	560 pF	680 pF	1000 pF	1200 pF	1500 pF	1800 pF	2200 pF	2700 pF	3300 pF	4700 pF							
<b>S47 / 2220</b> 		INCHES	(mm)																																		<b>DIELECTRIC</b> X7R	
	L	.225 ±.010	(5.72 ±.25)																																			
	W	.200 ±.010	(5.08 ±.25)																																			
	T	.150 Max.	(3.81)																																			
	E/B	.025 ±.015	(0.64±.38)																																			
<b>X1/Y2</b>																																						

STANDARDS: EN132400:1994+A2, IEC 60384-14:1993+A • UL60950-01, 3rd Edition  
 CERTIFICATIONS: TUV Rheinland 2272848 • UL File: E212609-A1-UL-1

