

U.S. Manufacturer of High-Rel Ceramic Capacitors Since 1980

CATALOG 2001 - REV. O - FEBRUARY 2024

HIGH RELIABILITY EXTENDED RANGE SURFACE MOUNT CERAMIC CHIP CAPACITORS FOR SPACE APPLICATIONS SR#M123A SERIES







100% Screened & 100% Screened & 100% Screened & 100% Similar to 100% Inspected Similar to 100% I

SR#M123A SERIES SURFACE MOUNT CERAMIC CHIP CAPACITORS

FORMERLY "#M123 DRAWING"

For space flight applications that require the highest level of reliability, Presidio recommends its high reliability extended range chip capacitors. Tested to the requirements of MIL-PRF-123, Presidio manufactures these chips on the same manufacturing line as its military products. Please note these capacitors are NOT MIL-qualified. Most parts from the SR#M123A series do not meet the MIL-PRF-123 design requirements for dielectric thickness. All parts are manufactured with **PRECIOUS METAL ELECTRODES.**

NASA S311P829 SPECIFICATION

Most of these chips are available per this most popular NASA drawing. Please click on the NASA S311P829 link on Presidio's website:

https://presidiocomponents.com

QUALITY ASSURANCE PROVISIONS

Every lot undergoes the following inspection and tests.

DESTRUCTIVE PHYSICAL ANALYSIS (DPA) — A representative sample is pulled from each lot and examined per EIA RS469 and to verify adherence to Presidio's design criteria. Sample size is per MIL-PRF-123.

NON-DESTRUCTIVE INSPECTION - CODE A

Non-Destructive Inspection is performed on 100% of the parts. X-Ray inspection is used for size 0201. Ultrasonic Inspection is used for sizes larger than 0603. X-Ray or Ultrasonic Inspection is used for sizes larger than 0201 up to and including size 0603.

THERMAL SHOCK — All parts are temperature cycled for 20 cycles to MIL-STD-202 Method 107, Condition A, except that max temperature is 125°C.

VOLTAGE CONDITIONING — All parts receive a voltage conditioning at 2X rated voltage and 125°C for a minimum of 168 hours and a maximum of 264 hours. Voltage Conditioning may be terminated at any time between 168 and 264 hour time interval that failures are less than .1% or 1 piece during the last 48 hours of the test. Method follows MIL-PRF-123. Resistors, instead of fuses are acceptable.

INSULATION RESISTANCE (IR @ 125°C) — All parts are tested at 125°C and Rated Voltage in accordance with Method 302 of MIL-STD-202. The minimum IR required is 10,000 Megohms or 100 Megohm-Microfarads.

DIELECTRIC WITHSTANDING VOLTAGE (DWV) — All parts are tested at 2.5X rated voltage in accordance with Method 301 of MIL-STD-202.

INSULATION RESISTANCE (IR @ 25°C) — All parts are tested at 25°C and Rated Voltage in accordance with Method 302 of MIL-STD-202. The minimum IR required is 100,000 Megohms or 1,000 Megohm-Microfarads.

CAPACITANCE — All parts are tested at 25°C and 1VACRMS in accordance with Method 305 of MIL-STD-202.

DISSIPATION FACTOR (DF) — See following table:

VOLTAGE RATING	NPO	X7R
Below 16V	N/A	7.5%
16V	0.15%	5%
25V	0.15%	4%
50V	0.15%	3.5%
100V+	0.15%	2.5%

 $= 1.0 \mu F$

PERCENT DEFECTIVE ALLOWED (PDA) — The cumulative PDA after Voltage Conditioning is 5%. Pieces rejected as out of tolerance for capacitance or visual screening will be removed from the lot but not counted in the PDA calculation.

VISUAL — A 100% inspection is performed IAW MIL-PRF-123 Appendix B.

MECHANICAL — Level 1 AQL 1% in accordance with MIL-PRF-123.

THERMAL SHOCK AND LIFE TEST — A sample is pulled from each lot. 100 Thermal shock cycles are performed and Life Test is performed for 1000 hours at 2X rated voltage and 125°C. Sample size and method follows MIL-PRF-123.

HUMIDITY, STEADY STATE, LOW VOLTAGE — A sample of 12 pieces is pulled from each lot and tested per MIL-PRF-123.

MARKING (Optional for sizes 0805 and larger only) — Parts will not be marked unless marking is specified on the PO. If marking is specified, a color letter will be used per Presidio's chip marking system.

STANDARD PACKAGING

Product will be packaged in individual waffle trays. Tape and reel option is available.

DATA PACKAGE

Data will be sent with each shipment including:

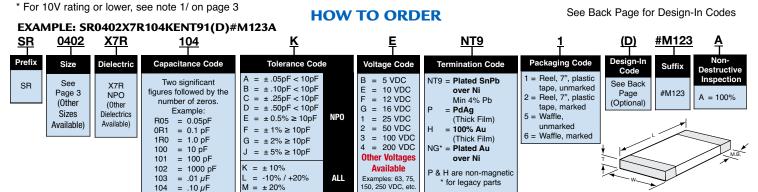
- · CERTIFICATE of COMPLIANCE
- DPA REPORT
- GROUP A & B ATTRIBUTE DATA SHEET
- · LIFE TEST AND HUMIDITY VARIABLES DATA SHEET.

Group B required for flight parts. Parts for engineering models may be subject to lesser screening requirements.

PART NUMBER EXAMPLE SR0402X7R104KENT91(D)#M123A

PART DESCRIPTION: SR, 0402, X7R, 0.1µF, ±10%, 10V, Plated SnPb Over Ni Termination, Tape & Reel, Design-In Code (D) for Arizona, Screened Similiar to MIL-PRF-123 Group A and Group B with 100% Ultrasonic Inspection.

C OF C AND DATA PACK INCLUDED WITH THE PARTS.



FOR SPACE APPLICATIONS

DATA SHE	EI FUR 3	K#IVI IZ3F	4 SEKIES					K SP	ACE APPL	ICATIONS
	L	w	THICKNESS	METALIZATION			/123A	. Available as S-311		Available as
SIZE	inches (mm)	inches (mm)	MAX (T) inches (mm)	BAND (M.B.) inches (mm)	WVDC		Capacitance)			M32535
	, ,		inches (min)	inches (min)		NPO	X7R	NPO	X7R	X7R
0201	0.024 (0.61) ± 0.003 (0.08)	0.011 (0.28) ± 0.001 (0.03)	0.013 (0.33)	.004 (0.10) min. band .008 (0.20) min. space	10 V	Consult Factory	0.01 µF 1/	No	No	Yes
0.003 (0.08	0.003 (0.00)	0.001 (0.03)		(с) срасс	10 V	390 pF	0.10 µF 1/	No	Yes	Yes
	0.040.44.00			.004 (0.10)	16 V	200 pF	0.033 μF	No	0.010 μF max.	Yes
0402	0.040 (1.02) ± 0.006 (0.15)	0.020 (0.51)	0.024	min. band	25 V	120 pF	0.033 μF	Yes	4700 pF max.	Yes
		0.004 (0.10)	(0.61)	.015 (0.38) min. space	50 V	100 pF	4700 pF	Yes	3900 pF max.	Yes
					100 V	39 pF	4700 pF	Yes	1200 pF max.	Yes
	0.040 (1.02) ± 0.010 (0.25)	0.030 (0.76) ± 0.010 (0.25)	0.030 (0.76)		10 V	1200 pF	0.047 μF	No	No	N/A
0403				.004 (0.10) min. band	16 V	560 pF	0.022 µF	No	Yes	N/A
					25 V	390 pF	0.015 μF	Yes	Yes	N/A
				.015 (0.38) min. space	50 V	330 pF	0.012 μF	Yes	Yes	N/A
				тип ораво	100 V	68 pF	2200 pF	Yes	Yes	N/A
	0.050 (1.27)		0.040	.005 (0.13)	10 V	2700 pF	0.082 μF	No	No	N/A
		0.040 (1.02)		min. band	16 V	1800 pF	0.082 μF	No	Yes	N/A
0504	± 0.010 (0.25)	± 0.010 (0.25)	(1.02)	.015 (0.38)	25 V	1500 pF	0.047 μF	Yes	Yes	N/A
	0.010 (0.23)	0.010 (0.23)		min. space	50 V	1200 pF	0.039 μF	Yes	Yes	N/A
					100 V	180 pF	6800 pF	Yes	Yes	N/A
Low Inductance	0.032 (0.81)	0.063 (1.60)	0.033	.005 (0.13) min. band	5 V	N1/A	0.10 μF	N/A	Yes	N/A
0306	0.006 (0.15)	0.006 (0.15)	(0.84) See Note 2/	.010 (0.25) min. space	16 V 25 V	N/A	0.10 μF 0.022 μF	N/A N/A	Yes Yes	Yes N/A
				` ′ ′	10 V	2200 pF	-	No	Yes	Yes
					16 V	2200 pF 1000 pF	0.22 μF 0.22 μF	No	0.010 μF max.	Yes
0603	0.063 (1.60)	0.032 (0.81)	0.035	.005 (0.13) min. band	25 V	680 pF	0.22 μl 0.18 μF	Yes	0.010 μF max. 0.027 μF	Yes
0000	0.006 (0.15)	0.006 (0.15)	(0.89)	.025 (0.64) min. space	50 V	560 pF	0.022 μF	Yes	Yes	0.018 μF max.
					100 V	100 pF	0.018 μF	Yes	3300 pF max.	Yes
	0.050 (4.07)	0.000 (0.00)	0.045	005 (0.40)	10 V		0.12 μF	N/A	Yes	N/A
Low Inductance	0.050 (1.27) ±	0.080 (2.03) ±	(1.14)	.005 (0.13) min. band	16 V	N/A	0.10 μF	N/A	Yes	N/A
0508	0.010 (0.25)	0.010 (0.25)	See Note 3/	.020 (0.51) min. space	25 V		0.047 μF	N/A	Yes	N/A
					10 V	4700 pF	1.0 µF 1/	No	Yes	0.10 μF max.
	0.080 (2.03)	0.050 (1.27)		0.020 (0.51)	16 V	3300 pF	0.22 µF	No	Yes	0.10 μF max.
0805	±	±	0.055 (1.40)	±	25 V	2700 pF	0.10 µF	Yes	Yes	Yes
	0.010 (0.25)	0.010 (0.25)	,	0.010 (0.25)	50 V	2200 pF	0.10 µF	Yes	Yes	Yes
					100 V	560 pF	0.10 µF	Yes	0.022 μF max.	Yes
Low Inductance	0.063 (1.60)	0.126 (3.20)	0.055 (1.40)	.005 (0.13) min. band	16 V	N/A	0.27 μF	N/A	Yes	N/A
0612	0.010 (0.25)	0.010 (0.25)	0.055 (1.40)	.025 (0.64) min. space	25 V	N/A	0.22 μF	N/A	Yes	N/A
					10 V	0.012 μF	1.8 µF 1/	No	Yes	Pending
	/	, ,			16 V	8200 pF	0.39 µF	No	Yes	Pending
1206	0.126 (3.20) ±	0.063 (1.60) ±	0.060	0.020 (0.51) ±	25 V	6800 pF	0.27 μF	Yes	Yes	Pending
	0.008 (0.20)	0.008 (0.20)	(1.52)	0.010 (0.25)	50 V	5600 pF	0.22 μF	Yes	Yes	Pending
					100 V	1500 pF	0.10 µF	Yes	Yes	Pending
					200 V	820 pF	0.027 µF	No	No	N/A
					10 V	0.018 µF	2.7 µF 1/	No	Yes	Pending
	0.125 (3.18)	0.095 (2.41)		0.020 (0.51)	16 V 25 V	0.012 μF 0.010 μF	0.68 μF 0.47 μF	No	Yes	Pending
1209	±	±	0.065 (1.65)	0.020 (0.51) ± 0.010 (0.25)	25 V 50 V	0.010 μF 8200 pF	0.47 µF 0.39 µF	Yes Yes	Yes Yes	Pending Pending
	0.010 (0.25)	0.010 (0.25)	(55)		100 V	3900 pF	0.39 μF 0.15 μF	Yes	Yes	Pending
					200 V	1800 pF	0.13 μl 0.068 μF	No	No	N/A
Low Inductance	0.095 (2.41)	0.126 (3.20)		.005 (0.13) min. band	16 V		0.68 μF	N/A	Yes	N/A
0912	0.010 (0.25)	0.010 (0.25)	0.065 (1.65)	.005 (0.13) min. band .025 (0.64) min. space	25 V	N/A	0.47 μF	N/A	Yes	N/A
	(0.20)	(5.25)			16 V	0.027 μF	1.2 µF	No	Yes	Pending
	0.175 (4.45)	0.105 (0.10)		0.020 (0.51)	25 V	0.022 μF	1.0 µF	Yes	Yes	Pending
1712	±	0.125 (3.18) ±	0.065 (1.65)	±	50 V	0.015 μF	0.68 μF	Yes	Yes	Pending
	0.015 (0.38)	0.010 (0.25)	(1.03)	0.010 (0.25)	100 V	6800 pF	0.27 μF	Yes	Yes	Pending
					200 V	3300 pF	0.12 μF	No	No	N/A
-1010	0.180 (4.572)	0.125 (3.18)	0.080	0.020 (0.51)		31/4	47 5 4		· ·	5
1812	0.015 (0.38)	± 0.015 (0.38)	(2.03)	0.010 (0.25)	10 V	N/A	4.7 µF 1/	No	Yes	Pending
	- (3.2-2)	. (3.2-2)		- \/	16 V	0.068 μF	3.3 µF	No	Yes	N/A
1725	0.400 (4.45)	0.015 (0.38) 0.018 (0.46)	0.065 (1.65) *0.080 (2.03)	0.000 (0.51)	25 V	0.056 μF	2.2 µF	Yes	Yes	N/A
	±			0.020 (0.51) ±	50 V	0.039 µF	2.2 µF	Yes	No	N/A
				0.010 (0.25)	100 V	0.018 μF	0.68 μF	Yes	Yes	N/A
			For max cap value		200 V	8200 pF	0.27 μF	No	No	N/A
					16 V	0.082 μF	3.9 µF	No	Yes	Pending
	0.220 (5.59)	0.250 (6.35)		0.020 (0.54)	25 V	0.068 μF	3.3 µF	Yes	Yes	Pending
2225	±	±	0.080 (2.03)	0.020 (0.51) ±	50 V	0.056 μF	2.2 µF	Yes	Yes	Pending
	0.015 (0.38)	0.018 (0.46)	(2.03)	0.010 (0.25)	100 V	0.027 µF	1.0 µF	Yes	Yes	Pending
					200 V	0.012 μF	0.47 µF	No	No	N/A

A WORD TO DESIGN ENGINEERS

After the design work is done, outsourcing manufacturing on a global basis is a management option. At Presidio Components, we are striving for complete customer satisfaction which includes "after" service for all of our products.

For quick traceability, if needed, we added a "Design-In" locator code. Please select your location from the list below and add the appropriate code at the end of the part number. If you need assistance give us a call at 1+858-578-9390 or email us at info@presidiocomponents.com.

UNITED STATES

OUTCIDE THE LIMITED STATES

USA	Code	USA	Code	Americas
Alabama	G	Nebraska	Р	Canada
Alaska	P	Nevada, North	В	Mexico
Arizona	D	Nevada, South	С	Caribbean
Arkansas	P	New Hampshire	L	Central America
California, North	В	New Jersey	J	South America
California, South	C	New Mexico	D	_ '1
Colorado	E	New York, Metro	J	Pacific Rim
Connecticut	L	New York, Upstate	K	Australia
Delaware		North Carolina	G	China
District of Columbia	Н	North Dakota	0	Japan
Florida	G	Ohio	М	Korea, South
Georgia	G	Oklahoma	P	Malaysia
Hawaii	P	Oregon	A	Singapore
Idaho	Α	Pennsylvania	ı	Other Pacific Rim C
Illinois	N	Rhode Island	L	
Indiana	М	South Carolina	G	
lowa	0	South Dakota	0	
Kansas	P	Tennessee	G	
Kentucky	М	Texas	F	
Louisiana	P	Utah	E	
Maine	L S	Vermont	L	
Maryland	Н	Virginia	Н	PAF
Massachusetts	L	Washington	Α	SR0402X7
Michigan	N	West Virginia	P	
Minnesota	0	Wisconsin, East	N	PART DESCRIPTION
Mississippi	G	Wisconsin, West	0	Plated SnPb Over N
Missouri	N	Wyoming	E	(D) for Arizona, Screen
Montana	Α			Group B with 100%

OUTSIDE THE UNITED STATES							
Americas	Code	Europe	Code				
Canada	R	Austria	3				
Mexico	R	Belgium	1				
Caribbean	R	Denmark	5				
Central America	R	Finland	5				
South America	R	France	2				
		Germany	3				
Pacific Rim		Ireland	6				
Australia	S	Italy	4				
China	T	Luxembourg	1				
Japan	U	Netherlands	1				
Korea, South	V	Norway	5				
Malaysia	w	Sweden	5				
Singapore	X	Switzerland	3				
Other Pacific Rim Cou	intries Y	United Kingdom	6				
		Other European Countries	7				
		Other					
		India	Z				
		Israel	8				
		Rest of World	9				

RT NUMBER EXAMPLE

R104KENT91(D)#M123A

N: SR, 0402, X7R, 0.1µF, ±10%, 10V, Ni Termination, Tape & Reel, Design-In Code eened Similiar to MIL-PRF-123 Group A and **Ultrasonic Inspection.**

C OF C AND DATA PACK INCLUDED WITH THE PARTS.

MAIN PRODUCT CATALOGS

Click Catalog Cover or Scan QR Code to Visit Product Page on Website



SURFACE MOUNT CERAMIC CHIP CAPACITORS



HIGH RELIABILITY EXTENDED RANGE **CHIPS FOR SPACE**



CERAMIC STACKED CAPACITORS



CERAMIC CAPACITORS



CERAMIC CAPACITORS FOR RE ENGINEERS



CERAMIC CAPACITORS FOR RF & MICROWAVE



HIGH VOLTAGE RADIAL LEADED & MIL-PRF-49467 CERAMIC CAPACITORS

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